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TRAJAN'S ARMY ON TRAJAN'S COLUMN

By I. A. RICHMOND

Introductory

THE best illustrations of the army which extended and protected the Roman Empire are to be seen on Trajan's Column. They are not, however, thoroughly known to classical students, for reasons which are worth stating. The primary reason is undoubtedly the scarcity of Cichorius's reproductions [1] of the reliefs and the still greater rarity of plaster casts; [2] but an important contributory factor is the bewildering quantity and peculiar quality of the material. The reliefs tell the story of two wars, the first a series of expeditions leading up to great battles, not unlike Agricola's campaigns [3] in Britain; the second an organised conquest, ending in the burning of the hostile capital, the suicide of the nobles and their King and the enslavement of a people. This narrative picture, as dramatic as the Bayeux tapestry but unprovided with a text, has attracted historians, because it seems to fill a gap in their literature, and students of art, as being among the most extensive and detailed examples of such Roman sculpture. But, without wishing to disparage the learning and ingenuity which have been devoted to such studies, it must be conceded that the results of study from these angles have been disappointing. Historians,[4] in default of a text, have failed to reach an agreed narrative. Art students [5] have classified the various scenes, but with intangible conclusions. Both lines of approach have the air of inadequacy that would mark a history of the Indian Mutiny or a theory of Victorian art based exclusively upon the news-prints of the day. In these circumstances it is permissible to ask whether the reliefs were meant to inspire this kind of analysis, or whether their message was not something totally different.

The connection of the reliefs themselves with the Column which they grace is a complicated one, but it bears intimately upon the history of their composition. As Dr. Lehmann-Hartleben [6] has pointed out, it is certain that they had no connection with the purpose of

[1] Studies of the reliefs must be based upon *Die Reliefs der Traianssäule, herausgegeben und historisch erklärt von Conrad Cichorius*, Berlin, 1896–1900, in two folio wrappers of plates and three quarto volumes of text. There are three systems of numbering, by plates (Roman), by scenes (Roman) and by casts (Arabic), the second being mostly used, as here. The second and third volumes of the text, describing the scenes, though consulted, have been deliberately eschewed as a basis for descriptions here, in order to form a completely independent judgment of what the scenes portrayed. Reference must also be made to the plates and text of Lehmann-Hartleben's *Die Traianssäule, ein römischer Kunstwerk zu Beginn der Spätantike*, vols. i (text) and ii (plates), Berlin and Leipzig, 1926, henceforward abbreviated as L-H. The plates are collotypes of large quarto size, but their small scale makes them inadequate for the finer detail. The text is indispensable. The scenes are quoted with Cichorius's second numbering, but the plates have also an independent Arabic enumeration.

[2] Complete sets of casts exist in the Lateran Museum, Rome, the Casts Museum, Berlin, and the South Kensington Museum, London, being moulded from the matrices in this order.

[3] No better illustration of a final victory, achieved, like that of the Mons Graupius, *citra Romanum sanguinem* (*Agricola*, 35), exists than scene xxiv.

[4] L-H. i, p. vii: cf. Petersen, *Trajans Dakische Kriege*, i–ii; Von Domaszewski, *Philologus*, 1906, 321; Stuart-Jones, *PBSR*, v, 442; Davies, *JRS*, vii, 74–97.

[5] Cf. Strong, *Roman Sculpture*, 202–3, 207–10.

[6] L-H. i, pp. 5–6; the inscription shews this, and excavations have made the matter plain; cf. Boni, *British Academy Proc.* iii, 93. One might compare the conversion of Victor Emmanuel's Monument into the tomb of the Unknown Soldier, in modern Rome.

the Column as at first designed, when it was intended to shew the height of cliff excavated in making room for the Forum in which it stood. They are, on the other hand, intimately connected in subject with the second conception, when the Column became a War Memorial crowned by an Eagle,[1] as the type of the victorious army. They also remained appropriate enough to the third phase, when the chamber at the foot of the Column was set apart to contain the ashes [2] of the Emperor and his consort, for they recalled some of his most distinguished triumphs. But it is very evident that the scroll itself was not originally designed for the Column, and this raises the question how the reliefs came into being at all, a point which is at least partly answered by considering the composition itself.

As a record of victory, the reliefs are a most unusual composition. The outstanding events of the wars could have been illustrated by a series of independent compositions, such as existed in panels, probably in this very Forum: and scenes of the kind could have been mounted on the Column in horizontal bands, for which there are abundant analogies. Again, it is quite certain that anyone of intelligence could have composed in a couple of hours a more telling continuous narrative of the wars than is given by the actual arrangement of the reliefs. The whole effect of the work is only matched by the modern cinematograph or an old Japanese scroll. Yet the essentially Roman nature of this presentation, no doubt not uncommon then in picture-books, is clear from its similarity to two other unillustrated Roman creations, the *Cena Trimalchionis* of Petronius and the *Saturae* of Juvenal, which owe their entire success as works of art to the fact that they include in a single frame a vivid series of disconnected pictures. The reliefs of Trajan's Column may justly be claimed to translate a picture-book into sculpture. Further, the whole motley composition, whether in book-scrolls or on stone, actually succeeds in making a more abiding impression than a series of clear-cut but isolated topical views. The result is also much nearer the truth: for the artist, including a multitude of minor scenes, thereby set the major events into their place as causes and effects in an unbroken chain of everyday activities. In fact, the minor events compel a rational, common-sense view of glory by sheer weight of numbers, thus conveying a truly remarkable interpretation of war to those who study the reliefs. The victories are portrayed, but always in company with the grinding toil which made them possible; while, pervading the composition, amid the blood and sweat of the labouring host, looms the figure of the Emperor as responsible commander-in-chief. This notion of Imperial responsibilities was no new idea; Paterculus [3] had found it embodied in Tiberius, and had expressed a soldierly realisation of the discovery in words. But Trajan's Column exhibits the first comparable treatment of the theme on stone, giving actual instances of the patient devotion to everyday duty which inspired the noble ideal; and nowhere was that ideal more constantly typified than in the Roman army and its commanders. Thus, the Column, as a memorial to that army, chiefly records how, under Imperial auspices, the soldiers went about their tasks. It tells something indeed of history, but more of the labour by which history was made.

The technical methods by which the translation was made have been thought to reveal the clumsiness attaching to first attempts. Everyone can see that a scroll wound round a column makes a poor display, even if picked out with

[1] L-H. i, 4: the coins shewing the Eagle are Cohen, *Médailles Impériales*, ii², Trajan, 357–9.

[2] Dio Cass. lxviii, 16; cf. Boni, *loc. cit.*

[3] *Hist. Rom.* ii, 113–15.

paint [1] and furnished with metal accessories.[2] But, as Lehmann-Hartleben [3] has very well stressed, the artist was responsible for neither the position nor the theme. His part was the expression, and he has exploited the scroll so as not to miss the feeling of continuity which his treatment of the theme demanded. It must be realised that when once the sense of flow is given to the various subjects which the form of the scroll so skilfully unites, there is no intimate connection between the successive scenes; as in the procession of daily life, very little links them except the march of events. At this point the artist's sense of selection becomes an important factor; for the scenes do not represent even one event from each day of the wars, but diverse yet typical activities, which are combined with certain renowned events so as to give an impression of continuous action, without necessarily representing exactly what happened. Thus, while the major events doubtless follow a rough time-sequence, and represent some facets of the truth, there is no need to assume the same of the minor ones, though each minor scene still remains typical of the context in which it is set.

These principles of composition must rapidly be obvious to any student of the reliefs; but they can only be successful as in Japanese art, when each scene is a precise and accurate delineation of the characters which compose it. Realistic work of any kind cannot succeed except upon these terms; and the reliefs owe their striking success precisely to the fact that they so clearly obey them. Each scene is clearly based upon a careful sketch, which must have been made in the war-area from actual details on the spot, because nowhere else can such things be seen or imagined in accurate combination. If proof of this cardinal fact were required, it appears, on the reliefs themselves, in the precise details [4] of buildings, costume, accoutrements, and physiognomy, of not only Trajan's legions and auxiliaries but also of the barbaric hosts of Dacians and their allies.[5] But this kind of observation, so detailed as to be almost photographic, is rarely exercised in immediate conjunction with the faculty of composition. Notes for a composition may be made, but the individual sketches for that eventual scene are made on a different page, perhaps in a different note-book. Indeed, it may be regarded as certain that this was so in dealing with Trajan's Column, because the history of the monument shews that the scenes were not applied to it until after the wars were over and the Column had already been voted for a different purpose. Thus, the scenes as there presented must be the result of working up the contents of an artist's war-time sketch-book. Such books must have been common as scrolls embodying family traditions; and provide a better derivative, because more detailed, than the triumphal cartoon,[6] conceived on broader lines.

If this analysis of the methods by which the

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[1] L-H. i, 147.

[2] *Ibid.*, and Abb. 23, 24: the fact is obvious throughout the reliefs.

[3] L-H. i, 1.

[4] For Roman buildings, see amphitheatre, xxxiii; arches, xxxiii, lxxix, xcviii; block-houses, i; entrenchments, see note 15, p. 12; forts, see section iv, below; lighthouse, lxxxiii; porticoes, lxxx, lxxix and lxxxi with temples; temples, lxxix; theatres, iii and lxxxvi (stone), c (wood); town, iii; watch-towers, i. For costume and accoutrement, see cavalry, lxiv; slingers, lxvi, lxx, lxxii, cxiii; club-men, xxiv, xxxvi, xxxviii, lxx; archers, lxvi, lxx, cviii, cxv; physiognomy, archers, cxv, club-man, xxiv, cavalry, lxiv.

[5] For Dacian buildings, see fortress, xxv, xciii; houses (stone), xxv (on legs), xxix, xlv; huts (wood), xxv, lix, lxxvi, cxix, cli, xxv and lvii on legs; pound, xxv; Sarmizegethusa, *murus gallicus*, cxiii–cxv; temples or tombs, lxii. For costume and accoutrement, ambassadors, c; cataphracts, xxxi, xxxvii; sword, lxxii, xciv, xcvi, cxv (on ground); Decebalus, cxlv, xxiv (cf. L-H., 68). In the case of the cataphracts (xxxvii) it is worth noting the intimate detail, extending to the eye-protector for the horse. The writer has noted many similar eye-protectors in the R-G. Central-Museum at Mainz and some in Bonn Museum. A fragment of one is in Cherters Museum.

[6] It is, in fact, much more likely that the cartoon was derived from the scrolls.

reliefs were composed represents anything like the truth, it automatically destroys the possibility of considering the scenes as valuable for chronology or as safe guides in topography. Even supposing that one man executed all the sketches, and worked them up into faithful scenes, he could not know, as the wars progressed, which scenes were to prove ultimately significant to the historian, especially when the number to be finally selected was still all unknown: also, artists are notoriously indifferent to considerations of this kind. Actually, any artist of merit could work up a series of field-sketches into a very convincing representation of the war as it took place; but few historians would go to such an account for chronological material or for any point external to the immediate content of the representation. Yet it must be admitted that on Trajan's Column very much this kind of selection must have taken place; for, although it is uncertain who chose the actual scenes which were finally to be carved upon the scroll, it is at least sure that a final selection must have been drafted in detail upon a roll exactly filling the required space. In other words, the original sketches, already themselves a selection, must have been revised afresh to suit their final situation: for the Column as first voted was not intended to be a War Memorial or to bear these reliefs. Thus, since it is impossible to suppose that the artist or artists originally composed the sketches with a situation upon the Column in mind; and since it must even remain doubtful whether they ever knew that their work was to be copied in stone, the chance that the scenes as preserved represent a carefully studied topographical or historical account of the campaigns becomes accordingly more remote.

The essential merit and ultimate value of these reliefs may therefore well be considered to rest entirely upon their claim to represent faithfully the figures and objects which go to make up each striking vignette. To return to the literary parallels, that is exactly the position which a critic must take in regard to them. They represent neither history nor topography but facets of social life; and it may be asked with some reason whether the composer of the scroll did not consider the similar representation of army life the greatest part of his work, to which all else was subordinated? Whatever the size or scope of the original collection of drawings, the scenes in scroll-form have been selected with the plainest intention of shewing with emphasis the army at work. Accuracy in this regard is what may properly be expected from them. They illustrate, with a care and fullness never before attempted and never afterwards surpassed, the adage that the Roman army owed as much to the spade as to the sword. In respect of that fidelity to detail they differ fundamentally from the reliefs of the Column of Marcus, which are the scroll of an impressionist, interested rather in the tumult and horror of war than in the methods by which it was waged. There is nothing impressionistic[1] about the scenes on Trajan's Column. They are best compared with the accurate drawings made a century ago by the journalist-artists whom press-photographers have now replaced; for examination quickly reveals that they possess the peculiar flatness of low-relief sculpture copied from a drawing. The details reproduced are often conceived in a manner that is appropriate only to the original scroll, as if the draughtsman had been ignorant or unmindful that the chisel was eventually to replace the pen. At this stage, when the scroll was transferred to stone, there was,

[1] L-H. i, 39 observes that only two out of all the scenes in the Column of Marcus illustrate building: in the Column of Trajan there are more than one hundred times as many.

naturally enough, some room for misunderstanding. But the tendency to make mistakes is greatly mitigated by the mechanical accuracy with which the stonecutters reproduced their model, without necessarily understanding all they saw in it. Sometimes there is a direct superimposition of ideas, as in portraying the entrenchment. The draughtsman drew it turf-built,[1] crowned by a duck-board walk, as those who know about turf-work can see even from the evidence as presented. But the stonecutter clearly thought that he was copying a stone wall, surmounted by an unusual decorative moulding.[2] Similar results of seeing without understanding appear in the representations of *ballistae*:[3] while the curious implements outside Sarmizegethusa[4] are copied without comprehension of their meaning. But the very fact that these muddles are quite exceptional attests the excellence of the original drawings: they at least were not an experiment but a tradition.

The usual attitude adopted by students towards this accuracy has been, however, to take it for granted, and to use the reliefs as illustrations for archaeological material. But it is natural that until the truth of the representations as a whole can be established, this use should be limited. Meanwhile, archaeological exploration, not least in Britain, has been accumulating a body of material which enables their accuracy to be tested. It is possible to find parallels for so many features illustrated that a comparison between the actual relics and their portrayal upon the reliefs ought no longer to be delayed. Hitherto, it has been absent partly because the analogies are of recent acquisition and occur in scattered sources, and partly because they are far removed from the path of the art-student. But a demonstrably successful comparison should very greatly enhance the value of the reliefs in the eyes of military students, to whom the original aspect of the remains with which they deal becomes of increasing concern; and it should serve to emphasise that aspect of the composition of the reliefs reviewed in the previous paragraphs, making them representative of an otherwise lost group of Roman artistic inventions. To test the matter, sixteen typical scenes, illustrating the different aspects of military life, have been selected for comparison with actual remains, but frequent recourse is had to other reliefs, in the commentary, in order to show that the selection is truly typical of the material considered.

Sect. i. The Army on the March

(*a*) Marching to a review (fig. 1). C. iii.–v.; L-H. 6. Casts, 10–14.

Description

Out of a walled town, containing three-storey buildings and entered through single gateways crowned by crenellated towers with two front windows, marches an army of praetorians and legionaries, crossing the Danube on parallel bridges of boats. The reed-crowned Father Danube looks on attentively, for the army is about to pass the Emperor in review.

The boats of the bridges face up-stream, with rudders fastened in position. Each boat carries amidships a stout pier of short vertical logs, held firm by horizontal slats. These are the main piers of the bridge; but, in addition,

[1] See *JRS* xvi, 264, where the writer first ventured this conclusion. The identification of the log-walk had already been made by Jacobi (*Saalburg Jahrbuch*, iv (1921), 70, n. 2) and Cichorius (ii, 61, Abb. 8), without perceiving that this implied an earthwork below, since duck-board walks have no place upon stone ramparts.

[2] Cf. xlix, where the duck-board walk becomes a pattern. For other misconceptions, see pp. 21, 25, 27, 28–9, 32, 34.

[3] See below, p. 14.

[4] cxiv: see pp. 39–40 for a discussion of their purpose.

a pontoon floats between each pair of boats and is built of closely-fitted planks, heavily nailed, the whole being crowned by small railings parallel with the road which it supports. Thus, anyone could stand on the pontoon to execute running repairs without difficulty. The roadway structure is of three thicknesses of timber, but the detail is not clearly discernible. Stout railings are fixed to uprights and diagonal cross-spars with very large nails. Where the bridge comes to land, it is carried on vertical struts, braced by cross-spars parallel with the roadway.

Most of the further bridge is hidden. Across it march praetorian standard-bearers, headed by the horses and grooms of the Emperor and his suite, and by bareheaded officers in moulded cuirasses, double kilts, and knee-breeches. Their standards are decorated with chaplets, medallions, a cross-bar with oak-leaf pendants and a statue crowning all. A *vexillarius*, whose square tasselled flag hangs on a cross-bar and is crowned by a winged Victory, and an *imaginifer*, whose *imago* has perished, complete the standard-bearers. The *signiferi* wear bearskin hoods over an ordinary crestless helmet, an over-tunic with lower border of cut points or round lappets and elbow sleeves, a *gladius* and sword-belt, a kilted tunic and knee-breeches. The *vexillarius* and *imaginifer* are bareheaded and cloaked, beyond which nothing more is visible. There are also two *cornicines*, clad like the *signiferi* with whom they are associated.

The legionaries on the hither bridge are preceded by an officer on foot, bareheaded and dressed in a moulded cuirass, double kilt, knee-breeches laced at the outer side and a long cloak. He is followed by a bareheaded *aquilifer*, whose eagle is decorated with a crown of valour: this standard-bearer is dressed like the other *signiferi* but with a long cloak instead of a bear-skin hood. Two legionary *signiferi* follow, carrying standards decorated with *paterae*, a cross-bar with elaborate pendants and a vertical wreath. They are accompanied by a *vexillarius*.

A long column of legionaries brings up the rear. Each man wears a neckerchief, a segmental cuirass reaching from shoulder to hip, a kilted tunic with elbow-sleeves, a sword-belt with *gladius* and sporran, and no breeches. Their oblong convex shield, with wreath-emblem, hangs from the left shoulder; their helmet, with cheek-pieces tied together at the crestless top, hangs down from the right shoulder. Most have long curly hair and beards, only a few following the Trajanic fashion of straight hair and clean-shaven face. In their right hand they bore a javelin, now gone. Over their left shoulder rides the stake carrying their kit. This consists of five objects: a string-bag, for forage; a metal cook-pot and a metal *patera*, for cooking and eating; a tightly-filled sack, containing either rations or clothing; and a satchel reinforced with straps, very like a tool-kit, and probably indeed containing the tools which a legionary carried. Two men are talking as they leave the town-gate, a finer structure than the rest, with towers on each side of it; the rest trudge in silence.

Commentary

The place which the troops are leaving, or passing through, is certainly a town, for its buildings are unmilitary and its outline quite unlike that of a legionary fortress. The type of town-gate is matched at the British town-walls of Colchester [1] (postern in the Castle grounds) and Lincoln [2] (west Gate). The

[1] The fallen superstructure of this gate can still be seen in the grounds of Castle Park at Colchester.

[2] This gate was discovered buried in the mound of the mediaeval castle, like the Roman walls of Cardiff and York. It collapsed soon after discovery, but not before a careful drawing, now in Lincoln City Museum, had been made by Samuel Tuke.

FIG. 1. THE ARMY MARCHING TO A REVIEW.

troops cross the river, and are to pass before the Emperor, who is sitting with his suite on a *tribunal* raised on the further bank, as shewn in the next scene. This is the gathering of the troops and their preliminary inspection, rather than their marching forth to war in full equipment. The campaign is not formally opened until a little later, when the Emperor in camp conducts the *suovetaurilia*,[1] thus hallowing the host for its work.

The bridges of boats are of regular Roman type. The legionaries carried log-canoes [2] with them for making such bridges, according to Vegetius and Hesychius; and the slight nature of such portable craft no doubt explains the combination of boat and pontoon visible here. A permanent bridge of boats spanned the Rhône at Arles, according to the Ostia mosaics.[3] This kind of work was done by the *classici*,[4] who were probably no more sailors than " navvies " are to-day.

The troops using the bridge are legionaries and praetorians. The latter are distinguished by their standards [5] only: and, in other reliefs on the Column, these standards usually accompany the Emperor, being the most sure indication of the presence of the praetorian troops. In camp, the standards are shewn grouped

[1] *Suovetaurilia* appear twice in the first war and once in the second (viii, liii, ciii), marking the opening of campaigns rather than the beginning of special tasks (cf. *JRS* xi, p. 13). The representation is to be compared with that on the famous terminal slab (cf. *JRS* xi, pl. i) of the Antonine Wall at Carriden. With the *allocutiones*, these scenes form the most important guides to the action of the reliefs. The procession goes all round the camp, headed by garlanded *tubicines* and *cornicines*, followed by the three decorated animals, with attendant *popae*, and by the troops in undress uniform. The general awaits it at the *praetorium*, sacrificing upon a portable altar or a turf altar, and attended by *tibicines*, *camilli* and the sprinkler of *mola salsa* (ciii).

[2] See p. 28 below.

[3] The bridge-head, built in stone, still exists; the mosaic is figured in *Notizie degli Scavi*, 1914, 286, see Constans, *Arles Antique*, 343: cf. Ausonius, *Urbes*, 77, *ut mediam facias navali ponte plateam.*

[4] *De mun. castr.*, 24. I owe the comparison with navvies to Mr. C. E. Stevens.

[5] As pointed out by Stuart-Jones, *Companion to Roman History*, pl. xxvii, 210–212.

apart from the legionary standards, as literature [1] proclaims that they should be. The reliefs on the Column thus differ markedly from other reliefs in the Capital,[2] wherein praetorians figure prominently, with their standards, which are worth comparing for detail. There is a sharp distinction visible here, between the legionary standards,[3] with their row of superimposed vertical *paterae*, and these elaborate compositions of chaplets and medallion. The *vexillum* [4] is to be compared with the example upon the tombstone of a Bonn *vexillarius*, and with the real article from Egypt, now in Moscow; while the *imaginifer* [5] can also be matched upon a stone from Mainz. The rank of the officer at the head of the army is obscure, owing to the present lack of colour. But Cichorius's notion,[6] that it is a centurion, is probably correct, since three of these officers appear in the marching column, and their dress agrees with that of Favonius Facilis of Colchester. They seem to be accompanied by decurions. Since the *legati* might be expected to be with the Emperor, the man may be a tribune, or perhaps the *praefectus castrorum*. A closer view of the bearskins [7] of the *signiferi* is to be had elsewhere.

The relief is also a *locus classicus* for the costume and kit [8] of the legionaries. Neither here nor anywhere else on the Column are they shewn with breeches.[9] This agrees with the evidence from the tombstones, which shews them sometimes with breeches and sometimes without them, and it may be suggested that this was, in Central Europe at least, the difference between winter and summer dress. The only part of the dress not visible is the military boot,[10] of which fine illustrations appear elsewhere, matched by numerous actual examples. There has been some argument [11]

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[1] viii, xxiv; cf. Tac. *A.* i, 18.

[2] Cf. Stuart-Jones, *Companion to Roman History*, pls. xxxvii, xlviii.

[3] Legionary standards: iv, viii, x, xxii, xxiv, xxvii, xxxiii, xlvi, xlviii, lxi, lxxvii, lxxxv, cvi, cxxviii; cf. standard on tombstone of L. Duccius Rufinus at York. Praetorian standards, v, viii, xl, xlii, l, liii, liv, lxiii, lxxv, lxxix, lxxxvii, lxxxvii, xcviii, cii, civ, cxiii, cxxiii, cxxxvii. There are also standards on xxiv, l, and lxxv which are of a peculiar type, perhaps connected with cavalry.

[4] *Germania Romana*, iii², pl. vi, 1: the Moscow flag is published by Rostovtzev, *Monuments of the Egyptian section in the Alexander III Museum, Moscow*, iii, pl. xxiv, from the Golenicheff collection. It is a scarlet flag with a Victory, on globe, holding a wreath and palm branch, all embroidered in gold. I owe this interesting reference to Miss M. V. Taylor. In England, *Proc. Soc. Ant. Newcastle*, ser. 3, iv, 18, figures the head of a staff or standard which is first and best described in *op. cit.*, ser. 2, x, 77, as found at Spennithorpe, in Wensleydale. It is a lotus-leaf capital on a stang, $4\frac{1}{2}''$ across, bearing 'a representation of a centaur slaying a wolf.' Total height, $8\frac{1}{4}''$. This object, as Mr. James McIntyre points out to me, is undoubtedly akin to the standard from Sidmouth, figured in *Illustrated London News*, 14 Aug. 1926, which is a socket from the top of a pole or staff, provided with a strong hook at right-angles to the figure above, and meant to hold something, perhaps a flag, hanging parallel with it. On its long base stands a centaur ridden by a winged figure and attacked from the front by a dog or wolf. As Major Gordon Home, who re-discovered the Sidmouth object, notes, the centaur was the emblem of the Severan *legiones Parthicae*. The first of these objects is apparently an *imago*, the second a *vexillum*.

[5] *Germania Romana*, iii², pl. iv, 2.

[6] *Cichorius*, ii, 35. The tombstone of Favonius Facilis, now in Colchester Museum, shews a centurion wearing greaves; a double kilt with metal-trimmed lower lappets; a breastplate; an elaborate belt, with which are connected a sword-strap and dagger-girdle; a dagger; a sword; shoulder-plates; sleeves to the elbow, and a cloak. He carries a vine-stick. Caelius and Q. Sertorius Flaccus wear *phalerae* on top of their cuirasses, the former having a plain cuirass, the later one of scale armour; see Lindenschmit, *Tracht und Bewaffnung des röm. Heeres während der Kaiserzeit*, pl. i.

[7] Scene x. Cf. Vegetius, ii, 16, *ursinis pellibus*: this was the disguise adopted by Germanicus, Tac. *A.* ii, 13, presumably because a *signifer* might move about the camp unquestioned.

[8] The standard of clothing is invariable on the Column, and is to be compared with that on the tombstones cited below. Compare also the pile of clothes carried by the legionary fording a river, xxvi. For the helmets, see Schaeffer's valuable work, *Le casque romain de Drusenheim.*

[9] Perhaps because it is summer. The evidence of the tombstones is for breeches or even trousers sometimes; cf. *Germania Romana*, iii², pls. xxviii, 3 and iii, 1 with breeches, iii, 2, 3, 4 without them; or pls. iv, 1 and 3 and v, 1 with trousers, v, 3 without them. Parker, *The Roman Legions*, 250, is perhaps too categorical.

[10] See, however, scene xv, and notes below.

[11] Jacobi, *Saalburg Jahrbuch*, iv (1921), 90, n. 3, thinks the arrangement abnormal, as against Rice-Holmes. Neither commentator visualises the special occasion of a parade, nor the desire to shew all possible on the part of the artist.

as to whether the kit was regularly carried on poles as here shewn; for, on the one hand, this arrangement appears nowhere else on the Column, and, on the other, it does not agree with the statement of Frontinus,[1] that the articles were *aptata fasciculis*. The difference might be explained in two ways: the artist may have illustrated the kit thus in order to shew just what it was (as, for example, he draws *lilia*[2] uncovered to shew their nature); or the arrangement may have been a special one to facilitate the inspection of kit, since an inspection is about to take place.

The standard articles which the men carry are susceptible of further analysis. The metal *paterae*[3] are extremely common in and beyond the frontier districts of the Empire; and there is some reason for thinking that they were made in large quantities by a few firms, such as the Campanian firms of Cipius Polybius and Ansius Epaphroditus. They are sometimes marked with the individual soldier's name. The metal cooking-pots[4] are less common, but are known at Newstead, also marked as individual property.[5] The normal diet[6] with which they were associated was corn, lard (*larida*), cheese and rough wine (*posca*); but this was not infrequently supplemented with foraged food in the common kettle[7] of the *contubernium*. Nevertheless, the food does not differ fundamentally from that of the Abruzzese peasant to-day. Some of this food could no doubt be carried in the string-bag with which each man is supplied. But the other containers, the satchel and the sack, are probably for tools and clothing. According to Josephus,[8] each man had a saw, axe, sickle, chain, rope, spade and basket. The last two were not carried by the men, but the other five objects may well have fitted into the little satchel, which is remarkably like a tool-bag. An example of the satchel[9] exists in the collection from Bar Hill in the Hunterian Museum of the University of Glasgow. It may be remarked that the sickle was not only used for reaping forage, as on the Column,[10] but also mowed bedding for the tents. The axes[11] are well known, together with their sheaths. The saws[12] are less common. In conclusion, it may be remarked that the object of Marius in inventing this method of transport was not to help the soldier, but to economise in baggage-animals: the soldiers were called *muli mariani* not because they were laden like *iumenta*, but because they took their place.

(*b*) Pitching camp after a day's march (fig. 2). C. cvi.–cvii.; L-H. 50. Casts, 280–285.

Description

A legion is just finishing its day's march, in fighting order, and is about to make contact with a second force, headed by the Emperor, which has been marching by a more peaceful

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[1] *Strat.* iv, 50, 7.

[2] xxv; see below, p. 36.

[3] For these *paterae* in general, see Haverfield, *Arch. Journ.* xlix, 228–231, and Bosanquet, *PSAS* lxii, 246–254: they are especially plentiful in Scotland, where they were valued as booty, cf. Curle, *PSAS*, lxvi, 298 sqq.

[4] *Newstead*, 274, pl. liii, 3, 4, 5, 6, 8: for names, see *ibid.* 274, fig. 37.

[5] *EE.* 1324 *a*, *b*.

[6] Spartian, *Vit. Hadriani*, 10.

[7] See Curle, *PSAS*, lxvi, pp. 310–314, figs. 18, 21.

[8] *B.J.* iii, 5, 95.

[9] Shewn to the writer by Miss A. Robertson, at the Hunterian Museum: she will shortly publish it.

[10] Scene cx; cf. *Newstead*, 283–4, pl. lxi, 2, 5, where it is noted that they are an exact reproduction of this type. For the practice of foraging, cf. Caesar, *B.G.* v, 17: the bedding occurs in Varro, *de L.L.* v, 166, s.v. *lectica*, and in Vegetius, ii, 10, as *stramina*.

[11] See *Newstead*, pl. lvii, 1–5, and p. 279, fig. 3 for the sheaths.

[12] An example is figured in *Newstead*, pl. lxviii, 6: as Mr. James McIntyre points out to me, its curved handle and double edge combine the advantages of the modern types of pruning-saw, which has *either* a curved handle and back, with one edge (the so-called 'Grecian' type), *or* a straight back and handle with two edges. The teeth in each edge are of different sizes, as now.

valley. Both columns have been preceded by an advance force, but the contrast in bearing between them is quite remarkable.

The legion is arriving at the gate of an entrenchment already prepared for it, and an officer at its head is about to give the signal, by a *cornicen*, for the standards to halt. The soldiers are meanwhile marching at ease, chatting to one another. Two *cornicines*, dressed like the *signiferi* to whom they signalled, one Praetorian *signifer*, an *aquilifer* with decorated eagle and a *vexillarius* lead the van. The private soldiers march in a column, with shields fixed on the left arm and javelins (now gone) in the right hand. They are wearing their crestless helmets, of which the broad neckguards, visors and cheek-pieces are very clearly shewn. The contrast with the last scene, where the soldiers are marching with full kit, but unprepared for action, is interesting. All the shields bear the winged-thunderbolt emblem; but one has in addition a four-leafed rosette, which is repeated on some of the cavalry-shields in the Emperor's column.

The second column, headed by the Emperor, advances at an equal pace, and the *cornicen* is blowing a halt, the *signifer* just behind him stopping with sharp precision. The legionaries still marching behind carry shields and javelins, but have discarded their helmets. They are followed by a baggage train, consisting of pack-mules and two-horse transport-carts with two wheels, all loaded with helmets and cavalry-shields.

Meanwhile, the *equites*, leaving helmets, spears and shields on the baggage-train, have entered a large marching-camp, already prepared, whose *portae decumana*, *quintana* and *principalis dextrae* are visible. It has a mound for a rampart—the simplest type shown on the Column—with neither rampart-walk nor merlons. But the work inside is not yet finished. Some tents are already pitched, incised by the sculptor ready for the painter to pick out in the background. Others are being unloaded from pack-mules and from transport-waggons, being rolled in tight bundles for transport with the seams of their leather squares standing out well. A staging, seen end-on and occupied by a trooper, has been run up to give access to an adjacent stream, from which another *eques* fills a camp-kettle as the first move towards an evening meal.

Commentary

This scene is particularly interesting as a contrast to the river-side review. The army is now in the field, marching both in fighting order and at ease; but in neither case is there any sign of the baggage being carried on stakes. On the contrary, the second column has relegated most of its spare *impedimenta* to the baggage-train. The presence of a praetorian *signifer* in the division which does not accompany the Emperor might seem[1] to imply that the *praefectus praetorio* was there in command.

The musical instruments deserve some comment. According to Vegetius,[2] those in use were the *tuba*, *cornu* and *bucina*. The *tuba*[3] was the most common, and sounded the commands to the soldiers: advances, retreats, and the beginning of watches were sounded in this way. The form of the instrument was straight, and it is shewn thus on the Column: but tombstones[4] mostly shew the *bucina*, with a central twist, like modern trumpets, which

[1] It would, however, be unsafe to base an historical deduction upon this point.

[2] Vegetius, ii, 22: iii, 5 (description of instruments). The trumpeters in a body were *aeneatores*, *CIL*, xiii, 6503.

[3] *loc. cit.*; *tubicen ad bellum vocat milites et rursum receptui canit . . . sive ergo ad vigilias vel agrarias faciendas, sive ad opus aliquod . . . tubicine vocante operantur.*

[4] Cf. Bonn Museum, no. 685 (15319); Museum Vindobonense, Vienna, tombstone of *M. Praeconius Iucundus, tubicen leg. xv. Ap(ollinaris)*.

Fig. 2. Pitching Camp after a March.

was ordinarily used for watches. The *cornu*[1] was of horn and silver, and was used for controlling the standard-bearers, for announcing the end of watches and for sounding the *classicum*[2] when the Emperor was present or when sentences of court-martial were carried out. The *classicum* was a call played on the *cornu* by *bucinatores*, and was of ancient origin. It was once the summons to the citizen-assembly, convened by the consul, who also used it in the field as commander-in-chief. Hence it became the Emperor's trumpet-call. At a general advance the *tuba* and *cornu* blew together,[3] because the soldiers were following the standards forward. On this picture, the standard-bearers are signalled to halt, as the preliminary to breaking column and taking up the allotted task of camping.

There is also an excellent view of the soldiers' helmets. The crests are stowed away, as always on active service.[4] The type with broad neck-guard, visor and cheek-pieces is not very common in Britain, but is well known on the Continent.[5] It is clear that the helmet was not worn when marching at ease, as in the rearward column.

The baggage train consists of pack-mules (*iumenta*) and two-wheeled carts. Both methods of transport appear again and again on the Column, and it is evident that the cart corresponds to a standard type.[6] In the *de munitionibus castrorum*,[7] one pack-mule goes to one

[1] Veget. iii, 5, *quod ex uris agrestibus argento nexum.*

[2] *id.* ii, 22, *classicum item appellatur quod buccinatores per cornu dicunt : hoc insigne videtur imperii.*

[3] *loc. cit. quotiens autem pugnatur et tubicines et cornicines pariter canunt.*

[4] They appear, however, in the *allocutio* of civ, immediately after the *suovetaurilia* opening the second war.

[5] See, however, *Newstead*, pl. xxvi; *B.M. Guide, Antiquities of Roman Britain*, pl. iv, the Ely helmet.

[6] Cf. cvi–vii, cxxix, lxi, lxvi. Scene lxi shews oxen and mules as draught-animals. In lxvi such a cart bears a *ballista* towards new gun-emplacements. These carts are not to be confused with the Dacian four-wheelers, with yoke-poles and harness, carrying miscellaneous objects, including a dragon-standard, in xxxviii.

[7] This may be deduced from the space allowed to *iumenta*, in front of each tent, which is nine feet by twelve. Cf. Columella, *de R.R.* i, 6, 6, giving a minimum of nine feet wide to oxen.

contubernium, carrying its tent, mill, kettle, kit and tools. All these things, with the carts (*vehicula*), were under the disposition of the *praefectus castrorum*,[1] the *praefectus fabrorum*[2] looking after the arms and repairs. It is not known how the carts were apportioned; but one to each *centuria* suggests itself, on the analogy of the *carroballistae*.[3] They would carry primarily the centurion's tent and luggage, with common property of the *centuria*.

The delineation of a marching-camp is of considerable interest. In the first place, it shews enough of the plan (three gates out of six) to demonstrate that this is the normal tertiate form recommended for large forces by the *de munitionibus castrorum*[4] and by Vegetius.[5] As fine examples of the type may be cited Gilnockie,[6] Cawthorn B,[7] Featherwood,[8] Cleghorn[9] and Kirkbuddo:[10] while Glenmailen[11] and Raedykes[12] will recall the Vegetian caution, *nec utilitati praejudicat forma*.[13] Secondly, the earthwork consists of a rampart only, of the *agger* type, *in unius noctis transitum*, described by Vegetius[14] and in the *de munitionibus castrorum*.[15] This simplest of all types is shewn several times on the Column, and is to be carefully distinguished from the more elaborate works described below. It will be noted that it is not even fortified by stakes, and a work made with *valli*[16] of the traditional form is nowhere shewn on the Column.

Inside the camp the tents are being set up. It is quite evident that the great bundles which are being unloaded are the tents, for they are divided into rectangular panels exactly like those of the tents as unfolded.[17] The panels themselves, stitched with tent-maker's stitching, are to be seen in large quantities in the National Museum of Antiquities at Edinburgh, and are the subject of a forthcoming study.[18] The tents are of at least three types, the large *praetorium* of the commander, also known as the *augurale*;[19] the *tentoria*[20] of the tribunes and

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[1] Vegetius, ii, 10.

[2] Vegetius, ii, 11.

[3] Vegetius, ii, 25; *nam per singulas centurias singulas carroballistas habere consuevit, e quibus muli ad trahendum et singula contubernia ad armandum vel dirigendum . . . deputantur.*

[4] *De mun. castr.* 21.

[5] Vegetius, iii, 8, *tamen pulchriora creduntur quibus ultra latitudines spatium tertia pars longitudinis additur.*

[6] Royal Comm. Anc. Mon., *Dumfriesshire*, pp. 27–8, no. 45, fig. 28.

[7] *Arch. Journ.* lxxxix, 21, fig. 3, 76, pl. xx.

[8] MacLauchlan, *Map of the Watling Street*, sheet vi.

[9] Roy, *Military Antiquities of the Romans in N. Britain*, pl. ix.

[10] *Ibid.* pl. xiii.

[11] *PSAS*, l, p. 352, fig. 10; cf. *Bericht xix R-G. Komm.* abb. 17.

[12] *Ibid.* 344, fig. 6; cf. *Bericht cit.* abb. 18 = *Brit. Acad. Suppl. Pap.* vi, fig. 8.

[13] Vegetius, iii, 8, *pro necessitate loci . . . castra constitues; nec utilitati praeiudicat forma.*

[14] Vegetius, iii, 8.

[15] *De mun. castr.* 48; Jacobi, *Saalburg Jahrbuch*, iv (1921), 68–72, distinguishes, (1) the work *in unius noctis transitum*; and (2) the *castra stativa*, '*supra quem ad similitudinem muri et pinnae et propugnacula componuntur;*' cf. Caesar, *B.G.* v, 40, vii, 72, viii, 9, and the same type, but composed of corpses for sods and arms for a breastwork, in the emergency of *Bell. Hisp.* 32. To these may be added (3) the semi-permanent type so often figured on the Column, as Jacobi notes (*op. cit.* 70, n. 2), without observing that the first and second types also appear. The complicated types are considered below, p. 21, n. 3. Examples of this kind appearing on the Column are xciv, ciii, possibly cvii, cxiv, cxxxi, cxxxiv (with emergency towers).

[16] The traditional stake is described by Livy, xxxiii, 5, 9; *Romanus leves et bifurcos plerosque et trium aut cum plurimum quattuor ramorum vallos caedit.* The Column exhibits only regularly-cut stakes for stockades, which are not associated upon it with ramparts.

[17] Cf. xxxiii; this type of bundle is presumably the normal *papilio*, called 'butterflies' by the soldiers either because they folded out like one, or because they came out of a long roll like a caterpillar; cf. Isid. *Orig.* xv, 10. The bundle is described by Cichorius (iii, 184) as *lange mit Stricken umschnürte Ballen* and *mit Riemen verschnürte Ballen*, mistaking the edges of the leather panels for binding-ropes. For closer views, see lxi–ii, and lxxv. Tent-pitching was one of the three important drills; cf. Appian, *Iberica*, 88, τοῖς μὲν ταφρεύειν ἐτέτακτο, τοῖς δὲ τειχίζειν, τοῖς δὲ σκηνοποιεῖν.

[18] See a preliminary note in *Cumb. and Westmorland. A. & A. Soc. Trans.* xxxiv, 62–90.

[19] Quintil. viii, 2, 8; cf. Tac. *A.* ii, 13: the tent appears in scenes viii, xii, xiii, xvii, xxi, liii, lxi, lxii, xcviii, cxxv, cxli, cxlvii.

[20] There is no evidence that the term was used distinctively for these tents, but they were at least neither *praetoria* nor *papiliones*. See viii, xii, xiii, xvii, xxi, xxviii, xliii, cv, cxiii, cxxv, cxxviii, cxlvii.

centurions; the *papiliones*[1] of the soldiery. The two first types are box-tents: the soldiers' tent, as shewn here, was a simple bivouac tent. The tent was at once sleeping and living-room for the *contubernium* of eight men, and each group had its own hearth[2] (if allowed), for which the kettle[3] is being filled at the stream. It is interesting to see the temporary staging[4] for watering, which prevents befoulment of the stream by treading down the bank.

Sect. ii. The Army in Action

(*a*) A field-dressing station; artillery in action (fig. 3). C. xl.; L-H. 22. Casts, 101–108.

Description

Parts of this great battle-scene are worth noting for their special features, the treatment of wounded and the *carroballistae* in action. Legionaries and cavalry are engaged in heavy fighting with the Dacians, but the victory is nearly won, and there have been large captures of Dacian prisoners, of whom one is being brought before Trajan and his praetorian body-guard by a trooper, while in the background others are having their forearms roped behind their backs.

Between these groups a legionary and a trooper are receiving first-aid. The cavalryman has a severe wound in his right thigh. His face is drawn with pain as a bandage is being applied to the critical spot, whence his breeches have been cut away. The legionary is being helped to a seat, and is hurt in his left arm or shoulder. The medical orderlies are troopers in standard clothing.

Meanwhile, the elevated ground in the rear is occupied by two *carroballistae*, each drawn by a pair of mules. The machines are constructed as part of a little box-like cart, with wheels of eight carved spokes set in prominent hubs, the whole quite unlike the normal transport waggon, and very much more like the hopper-trailer of a modern field-gun. It may, indeed, be surmised that the ammunition was kept in the little box under the machine: and it is worth emphasis that the whole cart is a specially-constructed object, not an ordinary waggon pressed into service. The machine itself is served from two sides by a staff of two legionaries, one loading and the other, as his attitude clearly shews, winding up the propulsion-spring with a little capstan at the side of the machine. The mules stand patiently, awaiting the recoil. The barrel whence the projectile was shot is elevated to clear the heads of the mules and give a low trajectory. The action of the crew indicates that the machines are in use, not in reserve, as their rearward position might alternatively suggest. The firing is directed over the heads of the Romans.

Commentary

The medical service of the Roman army has been discussed by von Domaszewski[5] and Cheesman.[6] It was the care of the *praefectus castrorum*;[7] and traces of an admirable hospital (*valitudinarium*) have been discovered at Novaesium[8] in the legionary fortress, while a

[1] For the name, see p. 12, n. 17. They occur in xvi, lvi, lxi, lxii, lxvi, cii, ciii, cvii, cix, cx, cxiii.

[2] Script. Hist. Aug. *Pescennius Niger*, 10: cf. Schulten, *Masada*, pls. iv, vi, viii; for prohibition, see Caesar, *B.G.* vi, 29, *monet ut ignis fieri in castris prohibeat;* cf. *S.H.A.* above.

[3] See *Newstead*, pl. liii, and *PSAS*, lxvi, 310, fig. 18.

[4] For similar stagings on a river-bank, cxxxi. A watering-party with skins appears on cxxiv.

[5] *Rangordnung des röm. Heeres*, 45.

[6] *Auxilia of the R.I.A.*, 43–44. Tac. *A.* i, 64 implies that *fomenta sauciis* were a normal provision.

[7] Vegetius, ii, 10.

[8] Novaesium, cf. *Legacy of Rome*, 295, fig. 15: Haltern, *Germania*, 1928, 74: Vetera, *Bonn. Jahrb.* 1932, 277. An interesting summary of evidence, inspired by Haverfield, occurs in C. Allbutt, *Greek Medicine in Rome*, pp. 467–9.

similar building at Housesteads[1] has been identified for auxiliary forts. In the field, Schulten has made a tempting identification of a group of tents at Masada.[2] There were trained doctors and their orderlies (*medici*, and *medici ordinarii*), of whose practical abilities the work of Paulus of Aegina[3] no doubt gives a fair picture. It was expected that they should carry into the field first-aid appliances, chiefly bandages, as in use here. These were no doubt applied by the ordinary trooper orderlies, while the *medicus* would be operating in the hospital-tent.

According to Vegetius,[4] *carroballistae* were at first invented to deal with elephant-charges, but their advantage in the open field must have been obvious from the first. He describes[5] a state of affairs in which they were apportioned at the rate of one to each *centuria*. *Non solum autem castra defendunt, verum etiam in campo post aciem gravis armaturae ponuntur:* they were drawn by mules and served by a gun-crew of one *contubernium*.[6] It is clear that the staff shewn on the relief is one reduced to a minimum, to prevent confusion, and that only the main actions are shewn. There is no other example of a *carroballista* on the Column, though a normal transport-waggon carrying a *ballista* to its *tribunal* (lxvi–vii) looks rather like one. But the *ballistae* are always represented in the same way, shewing that the sculptor copied and consistently misunderstood a uniform drawing. He seems to have mistaken the bow of the machine for an arched cross-brace between the two coil-chambers, a feature which is not demanded by the structure of the machine,[7] though the front of it was often slightly bowed, as on the tombstone of Vedennius Modestus.[8]

(*b*) The *auxilia* in action (fig. 4). C. lxx.; L-H. 33. Casts, 177–180.

The Dacians, proving no match for the Romans in the field, are being driven into one of their hill-forts, protected by stout palisading. Most of them press in through the gateway, while the rearmost are fighting desperately on their knees. The Roman attack is being driven home by a central body of dismounted troopers, with oval shields marked with a star and crescent, and long spears, once supplied in metal but now missing. While the identity of these soldiers may be in some doubt, they are supported by some highly individual units. Their right flank is guarded by a club-man, or *Kolbkerl*, whose head and torso are entirely naked, while his body, from the waist down, is clad in long trousers, loose to the knee and more tightly gathered in towards the ankle. How these men were shod is not clear, either on this or other illustrations. The trousers are held by a very thick waistband, to which is attached a sword, visible in other illustrations of these troops. For defence, the man is using a normal cavalry shield, decorated with the emblems already described, on his left arm, while his right hand brandishes a knobbed truncheon.

Still further out on this flank is a slinger, dressed in a short *chiton*, girt at the waist, and a short cloak, fastened on the right shoulder and draped over the left arm so as to contain in its folds his stock of ammunition, shewn in turn as a goodly collection of round missiles.

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[1] Block ix, *Arch. Ael.* 2, xxv, p. 239, pl. xix; see *Companion to Roman History*, p. 255.

[2] *Masada*, 128.

[3] This interesting work is rarely studied. It contains an important section of directions to army-surgeons for extracting missiles, and is remarkably up-to-date and practical. See remarks by J. S. Milne, *Surgical Instruments in Greek and Roman Times*, 6–7; also C. Allbutt, *Greek Medicine in Rome*, p. 414.

[4] Vegetius, iii, 24.

[5] *Idem*, ii, 25.

[6] *Idem, loc. cit.*, see note 5, p. 39.

[7] Schramm, *Antiken Geschütze der Saalburg*, pls. 9 and 11.

[8] Schramm, *op. cit.*, 36, fig. 10: also *Companion to Roman History*, pl. xxxviii, a better reproduction, from the original stone.

Fig. 3. A Field-Dressing Station; Artillery in Action.

His right arm is thus left entirely free to work the sling, here once supplied in metal and now vanished, but shewn elsewhere as held trailing but fully loaded, in the same attitude as here.

At the rear of the force, and pressing round on the left flank, is a company of archers. These tall Easterners retain their native physiognomy and costume. Their high cheek-bones and aquiline noses are clearly distinguishable, while their voluminous flowing skirts swing arrogantly round the ankles. Their short-sleeved shirts are covered by a leather jerkin reaching to middle thigh, where it terminates in decorated lappets, usually repeated on the edge of the sleeve. Over the left shoulder hangs the strap for the quiver, carried on the back where it can be reached by the right arm. The left hand holds the bow, and the whole of the forearm is encircled by a closely twined brace, enabling it to withstand the recoil of the powerful Turkish bow which is being used. The shape of this bow shews it to be a composite type, built up with horn and of immense power. Finally, the heads of these bowmen are protected by a conical cap, constructed in sections on a frame rather like that of a modern busby, and fitted with cheek-pieces fastened under the chin and a neck-guard just covering the occiput.

In the extreme rear, behind the rough ground framing the preceding subject, a further corps of dismounted troopers is awaiting the event of the fight; it is sheltered in a grove of palms.

Commentary

Auxiliary troops, where clearly to be recognised as such, occupy no large space on the Column, though it is always difficult to identify the cavalry troopers who occupy a very prominent part in all operations, but wear very similar dress. There is only one example of unquestioned auxiliary cavalry[1] shewn, where the riders bear round targes and lances, while their hair is dressed in long rolls from the crown of the head, suggesting North African[2]

[1] Scene lxiv.

[2] Cagnat, *L'armée romaine d'Afrique*, 332. Cheesman, *Auxilia*, 128–9; Stuart-Jones, *Companion to Roman History*, pp. 208–9.

connections. On the other hand, the infantry types appear several times and in different combinations. It may be remarked, however, that the presentation of the army as fundamentally Roman, with parts perhaps even masquerading as such, only reflects the standard opinion of the day and the definite army policy. In literature, the auxiliaries figure as rarely as upon the Column, because theirs is the unchronicled rough-and-tumble of the wars. In actuality, they were of set policy moulded in the Roman convention:[1] on parade they might wear masks concealing their non-Roman features in a classic frame, and on discharge they became Roman citizens. These facts are all symptoms of the same outlook, which does not prevent them from taking a notable place in the main battle scenes, because, as Tacitus[2] emphasises, a victory won *citra Romanum sanguinem* was a credit to the commander-in-chief. Again, the faith in the legions was strikingly justified by works: for the legion did indeed effect all that was required from a body of 'shock troops,' and perhaps even more than was expected in creating and maintaining communications. No better justification for its glorification on the Column could be found than the proud words of Vegetius,[3] written when the system had passed away: *Romana autem virtus praecipue in legionum ordinatione praepollet . . . Documentum est magnitudo Romana, quae semper cum legionibus dimicans tantum hostium vicit quantum vel ipsa voluit vel rerum natura permisit.*

Among the auxiliaries here figured, the distinctive Syrian bowmen were organised in many cohorts,[4] such as the Hamii, Ituraei, and Damasceni. These archers occur in three other contexts on the Column, twice in action and once on the march. On each occasion they are slightly differently clad, as if the artist had been copying different units. Those in action[5] wear coats of mail and those shooting into Sarmizegethusa[6] have both these and a sword. Those on the march[7] also have a sword, missing in this illustration, but wear quite a different pattern of leather jerkin, and no coat of mail. Such minor differences in the essentially similar clothing are most likely the result of copying men from various corps. Indeed, it is almost certain that the mail-clad archers at the siege of Sarmizegethusa must be a different body from those figured in the first war, two years earlier. In actuality it is interesting to note that the Hamian archers appear in Britain on both frontier-walls,[8] and have left traces of their presence at Bar Hill,[9] on the Antonine Vallum, in the shape of horn strengthening-pieces, recently explained by Dr. Kurt Stade,[10] as used for the tips of their composite bows. These particular illustrations of the bows in question have not, however, received the attention they deserve.

[1] Cf. Cheesman, *op. cit.* p. 65; for the parade masks, see *Newstead*, pls. xxix, xxx, and *British Museum Guide to Roman Britain*, pl. v, for the Ribchester helmet. The very great beauty of these articles has been quite insufficiently appreciated.

[2] *Agricola*, 35.

[3] Vegetius, ii, 2.

[4] Cichorius, *Paully-Wissowa*, iv, 329 *sqq.* records, *s.v.* cohors; I sagittariorum, I sagittariorum miliaria, I s. m. equitata, I Ulpia s. eq., III sagittariorum; I Apamenorum, I Flavia Chalcidenorum, III Cyrenaica, I Flavia Damascenorum miliaria, I Hamiorum, I Hemesenorum miliaria, I Aug. Ituraeorum, I Ituraeorum, I miliaria nova Surorum, I Thracum and I Tyriorum. Apart from the equitate contingents, *alae* are also known, three from inscriptions and one by inference. For the bow, cf. Lindenschmit, *Tracht und Bewaffnung des röm. Heeres während der Kaiserzeit*, pl. v, 3, shewing *Monimus Ierombali f.*, of *coh. I. Ituraeorum.*

[5] Scene lxvi.

[6] Scene cxv, shewing best of all the Eastern facial types.

[7] Scene cviii.

[8] *CIL* vii, 748, 758, 774, from Carvoran (Magna) on Hadrian's Wall: *ibid.* 1110 and *EE.* ix, 1242, from Bar Hill, on the Antonine Vallum.

[9] *Roman forts on the Bar Hill*, 122, fig. 44.

[10] *Germania*, xvii, 110–114, *Beinplatten zur Bogenversteifung aus römischen Waffenplätzen.* The matter is further discussed by Sir Geo. Macdonald, *Roman Wall in Scotland* (ed. 2), 283 sqq.; cf. also *Arch. Camb.* lxxxvii, 1932, 95–6 for a number of these objects from Caerleon.

FIG. 4. THE *AUXILIA* IN ACTION.

The slingers[1] were organised in bodies well known both in literature and epigraphy. They used a leather sling, projecting bolts known as *glandes*,[2] of which the leaden variety, as used at Birrenswark, has a truly acorn shape. But the round missiles[3] shewn here, of stone or baked clay, are also well known; and, while the leaden variety are certainly of early date, it is perhaps unsafe to conclude that the one type superseded the other, and still more risky to use either type as a chronological norm. The physical characteristics[4] of the slingers shewn here suggest that they are westerners rather than Cretans.

The status of the troops armed with clubs raises some difficulty. Since they were also armed with swords, of the long slashing type, it is not impossible to interpet them as *auxilia* who were allowed to retain national or tribal weapons for use in the field. The Dacian auxiliaries,[5] with their distinctive curved sword, are a case in point. It is, however, difficult to believe that regular troops would be allowed to fight so ill-clad, wearing no helmet and no covering for the body except a pair of trousers. Thus, the suggestion that these are less regular troops, perhaps *numeri* or the *symmachiarii*, as emended in the text of the *de munitionibus castrorum* by Mommsen,[6] has much to commend it, especially since the *symmachiarii* are now

[1] It must be said, however, that all the records of special bodies are of earlier date. *E.g.* Caes. *B.G.* ii, 7, 10, 19, 24; viii, 40; *Bell. Afr.* 78; cohorts appear in *B.C.* iii, 4, 44, 88, 93, 94, and Appian, *B.C.* ii, 49, 71. Livy describes the Balearic leather sling, xxxviii, 29. Tacitus mentions them twice, *A*, iv, 20, xiii, 39, the latter in A.D. 58.

[2] For the Continental examples, see Zangemeister, *EE.* vi, glandes plumbeae. Those from Birrenswark appear in *PSAS* xxxiii, 213–16, and one from Birdoswald appears in *C. & W. Trans.* O.S. xv, 200; cf. *Agricola*, ed. Furneaux-Anderson, liii. The idea that in this country the *glandes* were of early date was started by Haverfield, in *The Antiquary*, March, 1899.

[3] Cagnat, *Les deux camps de la légion troisième auguste à Lambèse*, 43.

[4] Brachycephalic, wavy hair, nose broad and snub.

[5] Cf. *CIL* vii, 838, of *cohors I Aelia Dacorum* at Birdoswald, which is decorated with this kind of sword and a palm-branch. Bruce, *Handbook to the Roman Wall*, ed. 9, 174.

[6] *De mun. castr.*, 19, 29, 43.

mentioned by a Spanish inscription[1] as drawn from the Astures for this very war. Other half-naked soldiery also appear,[2] wielding the spear or sword, and these may be the same men, using other weapons than their clubs. But the matter is not certain, and one at least wears not trousers but a kilt.

Sect. iii. The Army as Field-Engineers

(*a*) Camp-building with turf (fig. 5). C. xix.–xx.; L-H. 12.

Description

This important entrenching-scene takes place in the presence of the Emperor. But the draughtsman has chosen the moment when the earthwork is incomplete and the Emperor is no longer interested: he is standing with his suite and looking rather preoccupied, in the half-built camp.

The work is being done by legionaries, who have piled their arms in the foreground in a row. Each upright javelin is crowned by a crestless helmet, with cheek-pieces tied together and knotted round the spear-shaft; against the *pilum* also is propped the oblong convex shield, with a winged thunder-bolt emblem.

Four distinct activities are in progress. In the foreground, men are excavating earth, and removing it in plaited wicker baskets from a tract of ground off which the turf has been carefully stripped. At the edge of the stripped space some turves are cut for lifting, but not yet moved, while in the middle of the patch four turves overlap one another in a little pile. In the background, one half of the rampart is complete, with a rampart-walk of logs laid in corduroy, whose ends can be seen, together with the longitudinal timbers that hold them fast: and above this come merlons, whose substance the sculptor has not indicated, and probably thought that they were stone. Attached to a timber walk, they must be of wood or plaited osier. The other half of the rampart is being built with turves, which are being handed up or unloaded from a man's shoulder, a process better represented elsewhere (see below, fig. 6). In mid-field, between the cleared space and the rampart, the ditch is being dug. The men are already up to the armpits in their ditch, and they hoist up full baskets of excavated earth to comrades on the banks, and receive returned empties from them. The size of the baskets is not large, being nicely calculated for convenience of working, even in heavy soil or rock; while the baskets themselves could be easily made and inexpensively renewed. Finally, to one side, carpenter-legionaries are bridging a rapid stream in two places, in the foreground and opposite the *porta principalis* of the camp.

Commentary

This is a more elaborate type of entrenchment, something similar to the kind which Vegetius[3] prescribes for the condition *hoste vicino*. It is provided with both rampart and ditch, and the legionaries have their arms ready to hand, not even piled in stacks.[4]

Various details to be seen correspond to the precepts of literature. The baskets,[5] *cophinos quibus portetur terra*, are mentioned by Josephus and Vegetius, who also give elaborate

[1] *L'Année épigraphique*, 1926, p. 21, no. 88, mentioning C. Sulpicius Ursulus, *praefectus symmachiariorum Asturum belli Dacici*. The inference is that this class of soldier was also drawn from other communities than the Astures. I owe this reference to Mr. E. B. Birley. For the use of clubs, cf. the Aestii of Tac. *Germania*, 45.

[2] Scenes xxiv, xxxviii, xl, lxvi, lxxii, cviii.

[3] Vegetius, iii, 8; *nam singulae centuriae . . . accipiunt pedaturas, et scutis ac sarcinis suis in orbem circa propria signa dispositis, cincti gladio fossam aperiunt.*

[4] For stacked arms, see scenes, xii, xx, lvi, lxviii, lxxiii, cxxvi, cxxviii.

[5] Vegetius, ii, 25; Josephus, *B.J.* ii, 5, 95.

FIG. 5. CAMP-BUILDING WITH TURF.

instructions for sod-cutting. The turves[1] should be cut *ad similitudinem lateris*, exactly as shewn here, six inches thick, and one foot by one and a half feet in size: but they were only to be cut if the result was a solid block. There was a special tool[2] for cutting, without which the task could not be attempted, though it will be remembered how the Nervii,[3] imitating the Romans, did it with their swords. There can be no doubt that this is a scene of turf-stripping, and, granted this, the rampart marked off in straight lines must represent a turf rampart. This inference removes the difficulty implicit in the explanation[4] of the scene by Cichorius and Jacobi, who saw that the rampart-top was finished with a corduroy walk (*Bohlenweg*), but judged this to be combined with a stone wall below. But this combination has no warrant, either in actuality or common sense: while, on the other hand, there is every need to have such a walk on top of a turf-rampart, of which the surface is most unsuitable for a path. Again, the assumption that this is the convention for turf-work, *ad similitudinem lateris*, absolves us from believing that the field-army was engaged in putting up stone *castella*, in an age when these were new introductions, essentially connected with the permanent organisation of the frontiers. Stone *castella*[5] do indeed appear on the Column, with stone legionary fortresses,[6] but they are never crowned by log-walks, and are equipped with stone gateways and towers. This point is worth emphasis, because it brings the representation into

[1] Vegetius, iii, 8 *cespes autem circumciditur ferramentis, qui herbarum radicibus continet terram: fit altus semissem, latus pedem, longus pedem semis. Quod si terra solutior fuerit, ut ad similitudinem lateris cespes non possit abscindi, tunc . . . fossa percutitur. . . .* For illustrations of turf-work, see *JRS*, xxi, pl. iii.

[2] *loc. cit.*: cf. Tac. *A.* i, 64, *amissa magna ex parte per quae egeritur humus aut exciditur caespes*: see *Newstead*, pl. lxi, 3, for a turf-cutter.

[3] Caesar, *B.G.* v, 42; *sed nulla ferramentorum copia quae esset ad hunc usum idonea, gladiis caespites circumcidere, manibus sagulisque terram exhaurire videbantur.*

[4] See Cichorius, ii, 61, Abb. 8; Jacobi, *Saalburg Jahrbuch*, iv, 70 n. 2.

[5] Stone forts with doors and towers appear in scenes xxxii, xlvii, and xxxiii: stone forts in xcviii and c.

[6] Scene xxxv.

reasonable harmony with the usage of the times, and has hitherto received little attention from students of the Column.

Fragments of corduroy rampart-walks have not come down to posterity: but a lucky chance has preserved the post-holes limiting the embrasures of the fort at Munningen.[1] It is worth emphasis that these actual examples, together with the numerous stone ones which are known, bear out the spacing visible to-day at the Castra Praetoria [2] and on the Aurelianic Wall [3] of Rome, or on the late-Roman wall [4] of Terracina. The interval between the merlons usually considerably exceeds, and never drops below, the width of the merlons themselves, following in this respect the late-Republican examples on the south wall of Fondi.[5] The cases in which the converse is true are the late-Roman wall of Constantinople,[6] where there is some reason for thinking that spring-guns were fitted to the slits. On the wall of Gallienus at Verona,[7] the intervals are equal. Once again, it may be assumed that the Column reflects the usage of the time.

It should be noted that the ditch-digging is going on quite independently of the building of the rampart. The two operations were distinct, and the two methods of defence not necessarily, though usually, employed in conjunction. The *de munitionibus castrorum* [8] prescribes them as distinct methods, and Vegetius speaks of the *tumultuaria fossa* which can be dug by itself. The attention paid to communications, by the erection of wooden bridges, is also worth note. The more permanent works had a wooden superstructure and stone piers, as shewn on the Danube bridge below. The piling for these is well known to have existed on many streams in northern Britain, as Eden [9] at Templesowerby, Rede [10] at Risingham and at Elishaw Bank, Greeta [11] at Bentham and Tees [12] at Piercebridge.

(*b*) Camp-building: the handling of materials (fig. 6). C. lx.; L-H. 29. Casts, 145–147.

Description

This scene is devoted to the details of entrenching rather than a picture of the general procedure. In the foreground, legionaries are excavating a ditch. One is picking away the side with a metal *dolabra* (now vanished); another passes up a basket of excavated earth to a comrade; yet another rests his full basket on the bank, waiting for a man to return with the empty one. Inside and outside the un-

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[1] *O.R.L.* xlvi, Kastell Munningen, 68*a*, pl. ii, 1: pp. 3–4.

[2] *PBSR* x, pls. vi and viii: the criticism by von Gerkan of this view in *Germania*, xv, 303, is based upon insufficient acquaintance with the problem: there is no doubt about the way in which the facts present themselves on the spot.

[3] *City Wall of Imperial Rome*, p. 58, figs. 7 and 9, pl. iii, *a*, *b*, *c*.

[4] The sector to which reference is made is unpublished; it is to be found just north of the mediaeval *castello*, where the wall presents a polygonal base capped by Sullan rubble facing, crowned in turn by late-Roman merlons and two sets of post-Roman embrasures.

[5] Visible to the east of the south gate of the modern town. The merlons are 1·12 m. long, with an interval of 2·39.

[6] Each merlon preserved in the curtain south of the Golden Gate is T-shaped in plan, with the down-stroke coming back on to the rampart-walk. In the opposite angles of adjacent T's, some machinery has been dismantled and torn out. The holes now left indicate that the vanished object was massive: cf. Procop. *B.G.* i, 21, and *City Wall of Imperial Rome*, p. 29.

[7] See this volume, p. 75.

[8] c. 48, *munitio aestivalium observatur generibus quinque, fossa, vallo. . . .* It is the failure to realise that these are described as alternatives which has led editors to misunderstand the corruption in c. 50, about the *lorica* and the *vallum*; though it should be noted that the *vallum* is expressly described as made of material not derived from a ditch. The text reads *et lorica perbesis* (*pbes* MSS.) *similiter ante portas ut titulus ad fossas ad vallum causae instructionis sanctum est cognominatum.* If we admit in the first place the accepted emendation *et lorica parva fit*, all that is required is to replace the second *ad* with a full-stop. For the *tumultuaria fossa*, see Vegetius, iii, 8.

[9] Nicolson and Burn, *History of Westmorland*, i, 610.

[10] MacLauchlan, *Memoir*, 32.

[11] Rauthmell, *History of Overborough* (ed. 2, 1824), p. 134: Watkin, *Roman Lancashire*, p. 82.

[12] As yet unpublished. One may add the Kirk Beck, at Bewcastle, *C. & W. Trans.* (*N.S.*), xxiv, 115: cf. Tac. *A.* i, 56 for bridging on campaign, and *A.* i, 20 for this work as a permanent routine.

finished rampart, whose angles have been cut too sharp by the sculptor, as if it were a stone wall, soldiers are engaged in transporting blocks of material for building it. The blocks are long and thin, and carried on the back with a couple of taut rope-ends held over the shoulder, one man carrying two blocks thus, one on top of the other. The second man from the topmost angle of the rampart is propping one rather thin block in position on top of the rampart-mass, and is in the act of taking another off his shoulder to build it in position against the first. At the angle itself, another man unloads a block from the shoulder of a third, tipping it up with his left hand so as to drop it over on to the palm of his right. The finished part of the rampart has merlons but no duck-board walk.

Commentary

The tools for excavation,[1] not so different from modern entrenching-tools, are well known. But this illustration is chiefly valuable for the detailed handling of the blocks of turf. The blocks are not themselves like cut stone, which is not handled in this way. In handling stone, the block is taken and swung about by the end or ends. Turves, on the other hand, must be handled, as here, on the flat of the hand, in order to prevent them breaking up under their own weight. Similarly, they are carried on the flat of the shoulders, and only steadied by the rope passing round them. The sculptor, copying these details, has not fully understood them. The ropes passing over the shoulders of the central figure provide the clue to the meaning of the insufficiently elaborated straight lines crossing the shoulders of similar figures on this and other reliefs. These less well-finished carvings have been taken[2] to represent the shafts of a sort of hod for carrying stone: but they are not wooden shafts any more than the blocks are stone blocks, which, may it be repeated, no field-army ought to be using.

The type of rampart here shewn, as noted by Jacobi,[3] is a perfectly well-known type. At Cawthorn,[4] the greater part of camp A was fortified in this way, with a palisade or merlons and no rampart-walk behind them. The rampart-walk could be added without difficulty

FIG. 6. CAMP-BUILDING: THE HANDLING OF MATERIALS.

[1] Vegetius, ii, 25 *Item ad fossarum opera facienda bidentes, ligones, palas, rutra; alveos, cophinos quibus portetur terra. Habet quoque dolabras, secures, ascias, serras, quibus materia ac pali dedolantur atque serrantur.* Cf. Jacobi, *op. cit.* 84–92; also *Newstead*, lxi, 9, an entrenching tool.

[2] Bruce, *The Roman Wall*, ed. 3, 80; it might reasonably be assumed that this rope was that mentioned as ἱμάντα in Josephus, *B.J.* iii, 5, 95; cf. Jacobi, *op. cit.* 88. Cichorius, ii, 272, fails to note that *two* blocks, not one, are thus bound over the man's shoulder.

[3] Jacobi, *loc. cit.* The type occurs very frequently on the Column, where it is to be carefully dissociated from the examples of camps with a rampart-walk behind the merlons; see scenes, viii, xxvii, xlix (with towers), liii, lvi, lx, lxi, lxii, lxv, cv (annexe only), cx, cxiii, cxxv, cxxviii–ix, cxli.

[4] *Arch. Journ.* lxxxix, 25, fig. 5, pl. v, *a*.

Fig. 7. Camp-building: Ditch-digging.

by retaining or increasing the rampart behind the breastwork, as on Cawthorn A's east rampart. Cae Gaer, Llangurig,[1] is another complete example of the system.

(*c*) Camp-building: ditch-digging (fig. 7). C. lxv.; L-H. 31. Casts, 160–163.

Description

Auxiliary troopers are marching past the back of a tertiate entrenchment, with rounded angles, which legionaries are building. The rampart is receiving the finishing touches by the addition of merlons; and posts to hold their ends tight are being driven in at the *porta decumana* and being set in position for driving at one *porta principalis*. Inside the rampart, digging and levelling is in progress, whence legionaries are lifting up turves by hand and building them on to the rampart. Outside the rampart, ditch-digging is in progress. At the *porta praetoria* a man in the ditch lifts up a basket on his shoulder, ready for his comrade at hand to bear away. Round the angle, however, the work is less well co-ordinated, and two soldiers in the ditch are awaiting returned empties, while one spends the time telling the other, with expressive gesticulation, just what he thinks of his work. Thus, the gang-rivalry, one of the mainsprings of the army's efficiency, is here typified *in parvo*.

Commentary

It is worth remark that all the camps [2] represented on the Column, if it is possible to see their shape, are of the tertiate form. As already noted, this is true of many of the field-works in Britain, and the large Agricolan camps [3] at Newstead and Inchtuthil take this form also. On the other hand, there are camps [4] of about Agricola's time, for example,

[1] *Arch. Cambrensis*, 1914, series vi, vol. 14, 207.
[2] Cf. scenes xii, lx, lxv, cvi, cxxviii, cxli, cxlvii.
[3] *Newstead*, 14, plan: Inchtuthil, *PSAS.* xxxvi, 207, fig. 6.
[4] Chew Green, MacLauchlan, *Map of the Watling Street*, sheet vi; Bosanquet, *Hist. of Berwickshire Nat. Club*, xxv, pp. 63–4, pl. ii. Reycross, *C. & W. Trans.* (*N.S.*), xxxiv, p. 50.

FIG. 8. BUILDING A COMMUNICATION-STATION.

Chew Green I and Reycross, which are square. The present camp is of the same type as that last shewn, with the additional interest that the posts are being driven in at the gates,[1] as in Cawthorn A, Cae Gaer (Llangurig), and the *Erdschanzen* at Saalburg.

The gang-rivalry may be compared with an actual example in Caesar's civil war.[2] It is implied by the sectional work recommended by Vegetius,[3] *nam singulae centuriae . . . accipiunt pedaturas et . . . fossam aperiunt.* Such work was often timed by the commander-in-chief, as by Scipio[4] at Numantia, χρόνου τε μῆκος ὡρίζετο αὐτοῖς καὶ διεμετρεῖτο, and by Hadrian[5] during the manœuvres of the African army. The group of camps on Haltwhistle Common[6] has been thought to represent, in some cases at least, camps built for exercise: while it is found difficult to explain the Cawthorn[7] group upon other lines.

Sect. iv. THE ARMY AT WORK BEHIND THE FRONT LINE

(*a*) Building a communication-station (fig. 8). C. xv.–xvii.; L-H. 11. Casts, 37–41.

Description

In the oak-covered hill-country of Dacia, legionaries are building a fort. It lies on the bank of a stream, across which a little railed bridge of timber has been thrown, carried on uprights, braced with sloping struts parallel with the roadway. At the bridge-head, a man drives home the last stake of a palisade connecting the new fort with the bridge; and inside the enclosure thus formed are a couple of straw flares or beacons, of the type connected with signal-towers on the frontier (see fig. 14). On the right is the temporary camp in which the builders of these works live, inhabiting

[1] *Arch. Journ.* lxxxix, 30, pl. vii; *Arch. Camb.* 1914, ser. vi, xiv, 213; Jacobi, *op. cit.*, 51, fig. 23.

[2] *B.C.* i, 42.

[3] Vegetius, iii, 8.

[4] Appian, *Iberica*, 86.

[5] *CIL* viii, 2532, '*Exercitationes militares quodam modo suas leges habent, quibus si quid adiciatur aut detrahatur, aut minor exercitatio fit aut difficilior.*'

[6] By Professor Fabricius, whose opinion is quoted in xix *Bericht der R-G. Kommission*, 1929, p. 25, by Sir Geo. Macdonald.

[7] *Arch. Journ.* lxxxix, 45–7, 74–6, 77–8: see also the work last cited, *loc. cit.*, and fig. 21.

bivouac-tents, which the sculptor meant to carve in detail, but has only sketched in by incising them. The rampart of this camp, occupied for some little time, is of turf, crowned by a duck-board walk of logs, protected by rather widely-spaced merlons. Its angles are rounded.

The legionaries are chiefly occupied in bringing the trunks of small oak trees which they vigorously chop down. Some logs are small enough to be handled by one man with difficulty; others are borne by two men, in a sling from a pole carried between them. In the foreground, the Emperor, attended by three troopers, dressed in *caligae*, knee-breeches, double tunics and fringed cloaks, is pausing in a tour of inspection. He is noticing a legionary kneeling over a log. Apart from ornament, his clothing is here as comfortless as the legionaries'. He wears military boots, a standard kilted tunic, no breeches, a moulded cuirass with double kilt and epaulettes, sword-belt and a *paludamentum*. He is winning the confidence of his men by endurance in the field.

The new fort is still unfinished. Its rampart has not yet received a top, and is higher in one part than another. Just inside one angle, two legionaries are trimming and morticing an upright post with adze, hammer and chisel. Elsewhere, two half-finished structures are visible, consisting of vertical posts joined by a cross-bar: their position shews that they are the first stages of the framework for wooden towers. Two other men, on opposite sides of the fort, fix upright posts on the outer edges of the rampart, the beginnings of similar towers. In the background, supplies are passing up the route that the fort will protect: these are typified by a pack-mule with attendant.

Commentary

The place is a fort, because it has towers, which, like gates, were not added to a camp [1] unless a siege was imminent. The temporary fort at Cae Gaer, Llangurig,[2] is very like this one; for it had a rampart of earth, or perhaps rather decayed turf,[3] a palisade,[4] post-holes at the gates suggestive of stairs [5] and an angle-tower built astride the rampart.[6] Outside the fort here carved is an annexe containing beacons,[7] shewing that this fort was one of a chain of posts connected by a signalling system. This may be compared with the Isthmus posts of Agricola between Forth and Clyde,[8] which also had considerable annexes. It is not necessary to assume signal-towers as links in such a chain.

The existence of a temporary work in which the builders lived must have been very common; but it has rarely been sought, and actual examples are few. The best known is that of Gellygaer,[9] where the two works lie side by side, while Cawthorn [10] provides two examples, the builders of A living in C and the constructors of D living in B. Constructions of this kind were done by the *praefectus fabrorum* [11] and his corps of engineers, carpenters, builders, wheelwrights, smiths and painters being enumerated.

As a matter of detail may be noted the *caliga* [12]

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[1] Caes. *B.G.* viii, 9, '*portis fores altioresque turres imposuit.*'

[2] *Arch. Cambrensis*, 1914, ser. vi, vol. 14, 207 *sqq.*

[3] *Ibid.* p. 207.

[4] *Ibid.* plan, 207, 210–11.

[5] *Ibid.* 213.

[6] *Ibid.* 211.

[7] For the identification of these objects see below, p. 36, n. 1.

[8] Bar Hill, *Roman Forts on the Bar Hill*, 12, fig. 2: Croy Hill, *PSAS*, lxvi, 263, fig. 13, also Bar Hill, *ibid.* 264, fig. 14.

[9] J. Ward, *Roman Fort at Gellygaer*, 1903, plan; cf. *Arch. R.B.* fig. 6.

[10] *Arch. Journ.* lxxxix, 21, fig. 3.

[11] Vegetius, ii, 11: *habet praeterea legio fabros tignarios, structores, carpentarios, ferrarios, pictores, reliquosque artifices ad hibernorum aedificia fabricanda. . . . Horum iudex erat proprius praefectus fabrorum.*

[12] *Caligae* are consistently worn by the legionaries on the Column: but the Eastern archers wear a kind of low shoe, while the other auxiliaries do not wear the *caliga*, though it is not clear what type of boot or shoe they use.

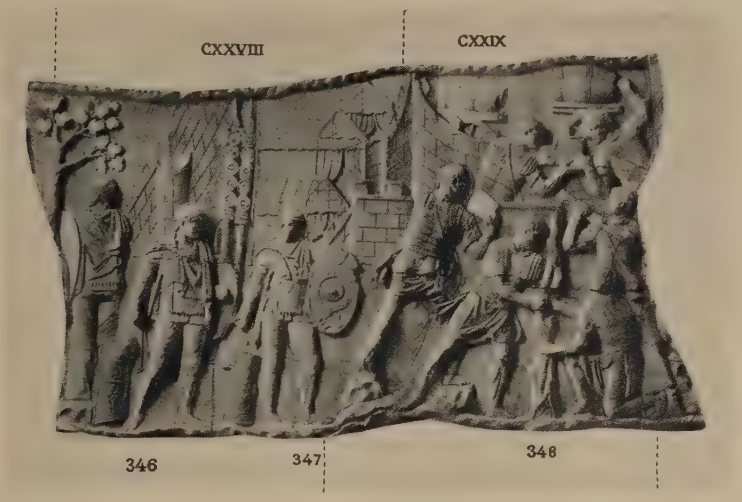

FIG. 9. A STORAGE-CAMP, WITH ANNEXES.

of the kneeling *lignator*. There is no better view of a soldier's boot than this on the Column. The upper is of straps laced through a main tongue which runs from a cross-piece above the toes to the ankle, where five contiguous straps encircle the leg. The soles[1] of the boots, as actual examples shew, consist of several thicknesses of leather, built up by lacing with flat thongs: while the hobnails[2] are of the approved modern hollow-headed type, rediscovered about thirty years ago.

The pack-mule in the rear exhibits a fine example of a pack-saddle[3] (*sagmarius*).

(*b*) A storage-camp, with annexes (fig. 9). C. cxxviii.–cxxix.; L.-H. 60. Casts, 346–349.

Description

This relief represents a rather complicated entrenchment, guarded by auxiliaries. It is depicted looking along the *via principalis*, and to typify the leather tents which it contains, the draughtsman has chosen the *scamnum*, along which are alined three officers' pavilions. These tents are held on a square framework of poles, with gabled roofs. They are made up of squares of leather, hemmed and joined, with thick prominent seams. The roofs have an ample overfall, to ensure that the drippings fall clear of the side walls. Their entrance is from the front, and is formed by making the front wall in two pieces, draped back like a curtain. A legion is in garrison, and two standards are placed at the end of the *via principalis*, indicating the position of the first cohort.

The rampart is of turf, without a walk but crowned by merlons. The *porta principalis* is hidden behind the figures of its guards; but the *portae praetoria* and *decumana* can be distinguished. The *decumana* has a fine internal *clavicula*, seen convex and well drawn. But the representation of the corresponding feature at the *porta praetoria*, which, as is correct, is seen concave, has taxed the skill of the sculptor.

[1] I am indebted for these details to Mr. James McIntyre, who dissected examples from Birdoswald and Chesterholm.

[2] These were thickly studded, and could give a hard kick: cf. Juvenal, *Sat.* xvi, 24–25, *Cum duo crura habeas, offendere tot caligas, tot Milia clavorum!*

[3] Cf. cxxxviii, where pack-horses bring in the treasure of Decebalus.

Pains are taken, however, to shew the log-ends of the corduroy on which both the *clavicula* and the rampart hereabouts are founded.

The main camp is thus complete. But legionaries, whose piled arms the auxiliaries guard, are still at work upon its crenellated annexe, which extends from the right-hand topmost angle in a sweeping curve. This annexe is crowded with flat-topped shallow-sided two-wheeled transport-waggons, loaded with long thin barrels. Still another rampart extends from the hither side of the *porta praetoria*, but this looks like an outwork rather than an enclosure. It also is founded on a corduroy of logs. In front of it, two legionaries are sawing the top off a polled tree-trunk, while another passes behind them carrying turf. From the right arrive two auxiliaries, bearing respectively a trimmed log and turf. The latter material is being handed over to a legionary for building, but the action is not quite clear. It rather looks as if the sculptor has conflated two original sketches, of a man carrying turf on his shoulder and a man handling it; and this may be symptomatic of the over-compression from which the whole scene suffers, as if an attempt had been made to fit a large drawing into an over-small space.

Commentary

This fine legionary field-entrenchment, of simple type, has various interesting points about it. Its rampart is of the simple type already discussed, though provided with merlons. But its gateways exhibit fine examples of the device known as the *clavicula*,[1] a curved arm of the rampart fitted to gateways and compelling an entrance from the left. These examples, like most in actual existence, are internal curves. The device seems to be an early one, and no dated example is yet known to be later than Trajan's time. The earliest example may be at Caesar's camp at Mauchamp:[2] under the Empire there is a secure date for those of Masada,[3] A.D. 73. Those of Cawthorn[4] belong to Domitian or early Trajan, together with the examples[5] at Newstead II, Dealginross, Cadder, and Ardoch. There is also a group of British undated camps[6] which have them, beginning with Y Pigwn, on Trecastle Mountain, and ending with Birrenswark North and Chew Green. All these lie upon routes much used in the first century. The device itself is described in the *de munitionibus castrorum*;[7] where, however, it only covers half the gateway.

Both the rampart and *clavicula* rest upon a foundation of logs,[8] as at Castleshaw I and

[1] The term is derived from *clavis*, with the Latin diminutive suffix. The most primitive form of key was a hook on the end of a bar, inserted through a hole to lift up the latch. The collar-bone receives its name from its resemblance to this form of key. Cf. Diehls, *Antike Technik*, 41, Abb. 7–11, where every sense except this military one is mentioned.

[2] Napoleon, Atlas, pl. 9: Grenier, *Manuel d'Archéologie gallo-romaine*, v, 1, 193, fig. 12: Rice-Holmes, *Caesar's Conquest of Gaul* (ed. 2), pp. 71, 661–4, 666, summarises various objections which would be removed by refusing to accept this camp as Caesarian at all. The type is so isolated that there is much to be said for Kahrstedt's transferring it to the Flavian age, on typological grounds, *Bonner Jahrbücher*, cxxxviii, 146, 151–152.

[3] Josephus, *B.J.* vii, 275–9; cf. *Masada*, pls. iv, v, vii.

[4] *Arch. Journ.* lxxxix, pl. vii, xxi.

[5] *Newstead*, plan, p. 38, also fig. 3, p. 80: Dealginross, Roy, *Military Antiquities*, pl. xi: Cadder, Clarke, *The Roman Fort at Cadder*, 26, and general plan. Ardoch, *PSAS*, xxxii, 438, pl. v, east gate.

Newstead I and Bar Hill exhibit devices akin to the *clavicula*, but not quite the same thing: see *Newstead*, plan, p. 38: *Roman Forts on the Bar Hill*, 12, fig. 2.

[6] Y Pigwn, Ward, *R-B. Buildings and Earthworks*, 9, fig. 3 *a*: Glenwhelt, MacLauchlan, *Survey of R. Wall*, pl. iv; *idem*, *Watling Street*, Four Laws and Dargues, pl. v, Chew Green III, Featherwood and Bellshields, pl. vi; Sills Burn South, *P.S.A.N.* ser. 4, vi, 241, 243; Birrenswark, *Brit. Acad. Suppl. Pap.* vi, fig. 9 = *Bericht xix. R-G. Komm.* fig. 19.

[7] c. 55, *puncto mediae portae, adaperto circino ad cardinem portae.* This will only give a quarter-circle covering one-half of the gate.

[8] *Roman Forts at Castleshaw, Interim Report ii*, pl. 17. Ribchester, Smith and Short, *History of Ribchester*, 1890, part i, p. 11. Examples appear in scenes xiii, xlix, cxxviii, of intermediate courses of logs: in cix and cxli, the logs are at the base of the rampart.

Ribchester. This is a method of foundation more solid than the brushwood foundation[1] known at Newstead and Coelbren, and less permanent than the stone bottoming[2] employed on the Antonine Wall or at Ilkley and Slack. Such foundations of wood have, however, nothing to do with the *cervoli* of the *de munitionibus castrorum*,[3] as sometimes thought.

Inside the camp, the disposition is particularly interesting for its view of the *scamnum*, or transverse block filled with tribunes' tents. At the end of the *via principalis* the first cohort should be placed, according to precept,[4] with the standards which were its care. Here also the standards fall next to the *scamnum*, as should be. The irregular annexe attached to the camp is an interesting counterpart of those known in actuality, as, for example, at Newstead.[5] The store-barrels with which it is filled can be matched by those of T. Pacatius,[6] from London. They must have held either food or drink, probably the drink *posca*, or coarse wine, barrelled like the finer wines of the Moselle, as shown on the Neumagen reliefs.[7] But it must be added that it is unknown how the lard was conveyed, and this may well have been barrelled, as nowadays.

That the figures building the annexe rampart are not clearly conceived has been noted already. The auxiliary soldier who is handing turf to a legionary has the action of a man both handing and carrying turf, as if the sculptor had conflated two drawings by mistake.

(*c*) Defending an artificers' depot (fig. 10). C. cxxxii.–cxxxv.; L-H. 62. Casts, 353–361.

Description

This lengthy scene depicts an offensive by Dacians against a fort garrisoned by auxiliaries, which protects an artificers' depot, lying at the junction of two streams. The Dacians have themselves been living in a log-corral, with an earthen rampart on one side. But they are leaving this in order to concentrate better on their attack, which is in the very act of developing. Two companies, protecting their heads with oval shields, advance from each side to attack the gate of the Roman fort, and are supported from behind by a hail of arrows and spears (now corroded away) by which it is hoped to denude the rampart.

The rampart itself is not a high one, and attackers, on the right, in attempting to rush it, have been repulsed with mortal spear-thrusts. Spears, indeed, with some sods, are the only defensive weapons that the Roman soldiers are using. Thus, they are at a serious disadvantage until they can make a sally and use their good shields and swords. The scale of the design does not allow the sculptor to shew how the towers above the gates are being used. These are two-storey structures consisting of a strong framework, held together with cross-spars and provided with railings, but unprotected by hides or merlons.

The Romans appear, however, to be in no doubt about the result of the attack. The

[1] *Newstead*, 24: Coelbren, *Arch. Camb.* ser. vi. vol. 7, 139–40.

[2] Macdonald, *Roman Wall in Scotland* (ed. i), pl. vi, 1, 2: Slack, *YAJ* xxvi, 12, pl. iii, fig. 6; Ilkley, *YAJ* xxviii, 156, pl. i, figs. 1, 2.

[3] The *cervoli* are evidently upright and used alone, as an alternative to the rampart; this is decisively shewn by Jacobi, commenting upon Livy, xxxiii, 5, 9 (see note16, p. 12) and Polybius, xviii, 18, *op. cit.* 57–59: cf. also Frontinus, *Strat.* i, v, 2, *vallum cervolis et alio materiae genere constructum incendit.*

[4] *De mun. castr.* 3.

[5] *Newstead*, plan, p. 14.

[6] Roman London, *Anc. Mon. Comm. Report*, 176, and, for illustration, *Antiquaries' Journal*, vi, pl. xxxv, 2.

[7] *Germania Romana*, iii², pl. xxxix, 2, xlii, 1; a further selection of these representations is handily collected in Loeschcke's *Denkmäler vom Weinbau aus der Zeit der Römerherrschaft an Mosel, Saar und Ruwer*, Trier, 1933, 21–26. Cf. Camille Jullian, v, 233, footnote 2, a very interesting discussion on barrels.

Fig. 10. Defending an Artificers' Depot.

legionary-artificers, who are at work in an adjacent log-encampment, continue their task unperturbed. They are carving the log-canoes used in bridge-construction, which are being hollowed out of a single tree-trunk with adzes and have neatly turned-over prows, shewing great skill in workmanship.

Commentary

The lack of invention shewn by the Roman army of the early Empire in the use of weapons suited to defence of their ramparts demonstrates how far from the minds of their tacticians [1] was the idea of deserting offensive for defensive theory. The regular weapon for sustaining a serious siege was the *pilum murale*, of which no example appears on the Column, though actual remains of these sharpened wooden stakes [2] are known, as at Oberaden and Castleshaw. Here, the soldiers are using shields, spears and sods. The towers at the gates are interesting structures. Being of wood, they were not enclosed,[3] so as to offer a better target to firebrands, but were simple elevated platforms [4] hardly protected from missiles by railings at the top.

The fort which is thus surprised was set to protect legionaries working in a lumber-camp, preparing the log-canoes for bridging streams. As Vegetius remarks,[5] there were various ways of crossing large streams, and the soldiers were taught [6] to swim; *sed commodius repertum est, ut monoxylos, hoc est paulo latiores scaphulas, ex singulis trabibus excavatas, pro genere ligni et subtilitate levissima, carpentis secum portet exercitus, tabulatis pariter et clavis ferreis preparatis. Ita absque mora constructus pons, et funibus qui propterea habendi sunt vinctus, lapidei arcus soliditatem praestat in tempore.* The army-carpenters were thus expected regularly to make such boats, and

[1] Cf. R. G. Collingwood, *Vasculum* viii, 4–9.

[2] Oberaden, *Jahrbuch K.D. Inst.* xxiii, 79 ff.: Castleshaw, *Interim Report*, ii, pl. 17; pl. 25 of the latter work illustrates also the Oberaden *pila muralia*.

[3] The mere preparation of boards for the purpose would have been a formidable task.

[4] Bearing these towers in mind, it is easy to reconstruct Caesar's extraordinary fortifications of *B.G.* viii, 9: the towers had three floors, one at the rampart-walk level, and two above: they were placed so close that the intermediate floors could be joined (*pontibus traiectis*) and a second rampart walk thus laid (*constratisque coniungi*). With towers which were only frameworks this was easy to construct.

[5] Vegetius, iii, 7, between horse-lines; by dividing the stream; rafts; swimming.

[6] Vegetius, i, 10: cf. scene xxvi, where the army is crossing a river.

also warships [1] if required. In order to keep up communications, large quantities of these boats must have been required for temporary use. Here the soldiers are shewn, in an advance-base, supplementing the supply. British students will recall that bridge-building was the feature of the Severan [2] expeditions in Scotland which was thought most deserving of record on the coins advertising the victory.

(*d*) A prison-camp (fig. 11). C. xliii.; L-H. 22. Casts, 113–114.

Description

Nothing like this little fort appears elsewhere on the Column. It may be recognised as a concentration camp for prisoners, guarded by "thunder-bolt" legionaries, standing on and outside the rampart. A distortion of one side, at a gate, turns it into a pentagon: but this is probably a concession to the design, or the sort of mistake that in this very fortlet omits the merlons from the frontal view, or draws them without regard to perspective on the left side. There are two gates, placed in adjacent sides. The turf rampart has a duck-board walk and merlons. Inside the camp is a pavilion-tent, indicating how the prisoners were housed, and a little wooden office, with glazed window, for administration, outside which is standing a burly trooper in undress uniform. The rest of the space is packed with Dacian prisoners, some wearing chieftain's hats, and all hollow-cheeked. How Roman prisoners fared in Dacia is shown elsewhere.

Fig. 11. A Prison-camp.

Commentary

The Roman treatment of ordinary prisoners was not marked by kindness, though it did not descend to the wild cruelty of torture,[3] not seldom meted out to Romans by their enemies. In the battle-scene previously noted, ordinary prisoners are shewn (fig. 3) roped ready for concentration, probably in the slave-market.[4] The famous Mainz column-bases [5] shew male prisoners chained together by iron collars. In another scene on the Column,[6] Trajan is shewn at an exhibition of captive women, exercising his clemency. The prisoners shewn here are of rank, as indicated by the chieftains' hats,[7] and it is always possible that they are hostages rather than prisoners.

The little administration-hut, with its glass window, need excite no remark, since

[1] Cf. Caes. *B.G.* v, 11, *B.C.* i, 36; Tac. *A.* ii, 6; Frontinus, *Strategemata*, iv, 1, 20.

[2] The coins are Cohen, *Méd. Imp.* iv, Sept. Sev. 522, an elaborate bridge, with portico, perhaps not the same thing; Caracalla, 603, a bridge of boats. Cf. Sir Charles Oman, *Num. Chron.* 1931, iii, 137.

[3] Dacian tortures are shewn in scene lxv: cf., however, amputation of hands, *Bell. Gall.* viii, 44.

[4] Cf. Caes. *B.G.* ii, 33; iii, 16; vii, 89; Tac. *A.* xiii, 39.

[5] *Germania Romana*, ed. 2, i, pl. ix, 3.

[6] Scene xxx: a lady of distinction is followed by a crowd of women with babes in arms; they move towards a moored boat on the river-bank, while Trajan and his soldiers extend their hands in farewell.

[7] This is the type of hat worn by Decebalus, xxiv, cxlv, and other chiefs, lxxv, cxxxv: ordinary Dacians go bareheaded.

window-glass[1] is common in first-century frontier forts, as at Coelbren. The type of fort in which it stands is a little one, very like those[2] at Throp and Haltwhistle Burn, which belong to the Trajanic age. The temporary works[3] at Gellygaer and Willowford are also of the same type. The change in direction at one of the gates can be paralleled at Margidunum, but it is very rare[4]; it is more probably a distortion than a correct representation.

Sect. v. The Permanent Bases of Field-Organisation

(*a*) A legionary fortress and its harbour (fig. 12). C. xxxiii.–xxxiv.; L-H. 18–19. Casts, 80–86.

Description

The Emperor, accompanied by his suite, is addressing praetorians and three standard-bearers, before the start of a river-voyage. All are in undress, wearing kilted tunics and cloaks, and are standing outside a legionary fortress, related to the river just as Chester is to the Dee or York to the Ouse.

The fortress has a well-built stone wall, surmounted by parapet and merlons. It has internal towers, also of stone, served by doors from the rampart-walk, covered by a gabled roof with axis parallel to the rampart and lit by two long front windows with arched tops. Inside the fortress, the ends of stone barrack-buildings are visible, separated by a more elaborate building with an arcade, intended to represent one of the administrative buildings. Outside the rounded angle of the fortress, is a stone amphitheatre, two storeys high, with windows belonging to a corridor or staircase-landing in the second storey. The rows of seats inside are continuous from top to bottom, and divided into *cunei* by stairs leading straight down from the top level.

The harbour buildings are less regularly treated. But there is a long stone building with a projecting wing in the centre, suggestive of a store-house. The port-entrance is flanked, on each side of the river, by an honorary Arch with single opening; and on the nearer Arch the artist has found room to represent a four-horsed chariot.

Meanwhile, troopers are stowing their own armour and that of the legionaries, already embarked, into a cargo-boat, of the type used for river-traffic. But the bulkiest objects which they are handling are the leather bivouac-tents, folded in half along their length and then rolled into bundles. The legionaries' kit is not shown, because it is in their own charge on board, as appears in one of the cargo-boats. Further down-stream, a bireme warship, manned by legionaries, is ready to start. A second warship, and the flag-ship, with crenellated forecastle, are already under way; and two transports, one carrying tents, kits and armour, and the other horses, are being steered out into the mid-stream current.

Commentary

There are two points of general interest in this valuable representation. The legionary fortress is of the stone type, as constructed at Caerleon[5] in A.D. 100 and York[6] in A.D. 107–8. Its appearance on the Column shews that it was the generally accepted type of legionary fortress. Secondly, the close association of the

[1] *Arch. Camb.* ser. vi, vol. vii, 149.
[2] *C. & W. Trans.* ser. ii, vol. xiii, 378, fig. 35.
[3] Willowford, *ibid.*, 396; Gellygaer, *Arch. R.B.* fig. 6.
[4] *Arch. R.B.* fig. 5: *JRS* xiii, pl. viii.
[5] Inscription of A.D. 99–100, *JRS* xviii, 1928, 211, fig. 71; for date of wall, see *Arch. Camb.* lxxxv, 1930, 196.
[6] *CIL* vii, 241, from the gateway in King's Square.

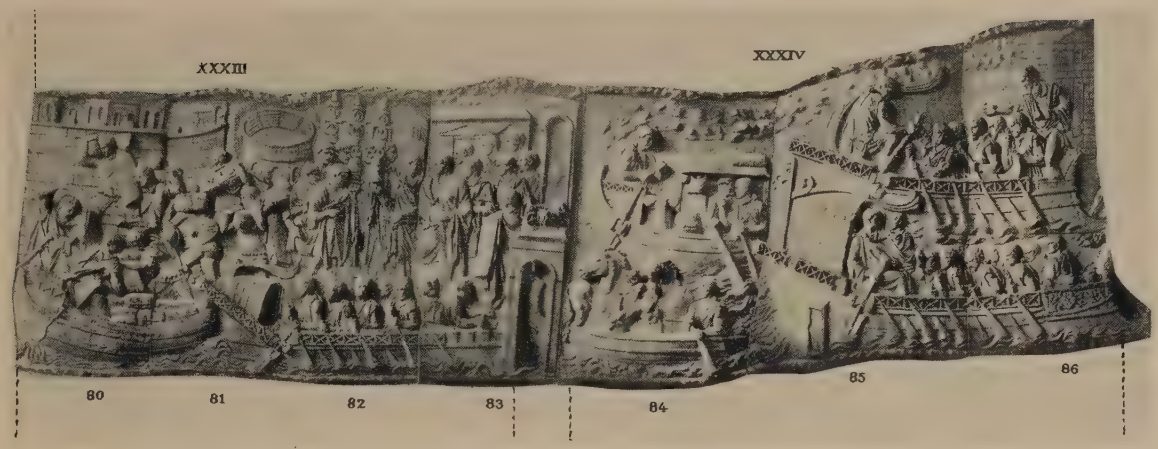

FIG. 12. A LEGIONARY FORTRESS AND ITS HARBOUR.

fortress with a river-port is to be noted. With the exception of Leòn, all legionary fortresses of the Trajanic age in Europe were situated upon great rivers, not only because those rivers formed natural frontiers, but, as the British examples shew, because water-transport [1] offered a readily accepted alternative to road traffic, especially in the carriage of heavy goods, and a more rapid conveyance for armies on campaign. Boats and ships were clearly regarded as essential for organising expeditions and for shipping supplies to the frontier.

Passing to further detail, it is to be noted that the parapet and merlons continue with their parapet-walk in front of the main rampart-walk on which the towers are situated. This device occurs at York,[2] where the two walks can still be seen, and the double arrangement greatly improved the defensibility of the rampart. In front of the rampart lies the Amphitheatre,[3] in much the same position as at Caerleon and Chester. Amphitheatres were clearly a regular feature of legionary fortresses, and were doubtless used for regimental drills [4] at least as much as for hired companies. Inside the fortress, the long stone buildings next to the rampart are clearly barracks,[5] but the fact that only one corner of the fortress appears renders a precise identification of the administrative buildings uncertain, though the presence of a lower range at right angles to a high hall suggests the *principia*.[6] There are also extensive harbour-buildings,[7] and a couple of honorary

[1] Cf. the advantages urged for the canal connecting Belgica and Lugdunensis, Tac. *A.* xiii, 53, *sublatis itineris difficultatibus, navigabilia inter se Occidentis Septentrionisque litora fierent.* For river-travel in general, C. E. Stevens, *Sidonius Apollinaris*, 75, note 1.

[2] *JRS* xv, 177–8, pl. xxxi, 2.

[3] Caerleon, *Arch. Camb.* 1929, lxxxiii, 4, *Archaeologia*, lxxviii, pls. 17 (general plan in relation to fortress), 18 (perspective), 20 (detailed plan): Chester, *Journ. Chester and N. Wales Architect. Arch. and Hist. Soc.*, N.S. xxix, pl. xvi.

[4] Gladiators' training-schools (*ludi*) were small Amphitheatres, with a limited seating and large arena, like these; and the connection between gladiatorial technique and the soldier's sword-drill, introduced by Rutilius Rufus (Val. Max. ii, 3, 2) will be recalled. Another feature which the Roman War Office may be thought to have borrowed from the world of athletics were the *naves lusoriae*, no doubt at first connected with the *naumachia*: their small size is to be calculated from Amm. Marc. xviii, 2, 11–12. For a discussion of *ludi*, see Lundström, *Undersökningar i Roms topografi*, 22–25.

[5] Cf. *Arch. R.B.*, fig. 4.

[6] As at Xanten, *Bonner Jahrbücher*, 126, p. 1: even in the smaller *castella*, the *principia* contained a high cross-hall.

[7] Cf. Ostia, Calza, *Guida storico-monumentale*, plan.

Arches,[1] between which boats are passing out into the river.

The boats in use are warships, for the soldiers, and cargo-boats, for baggage and horses, as in Caesar's Channel-crossing,[2] the soldiers being expected to man and propel both. The warships have a high stern with a cabin [3] and a couple of large sweeps or steering-oars. The motive power is provided by two banks of oars, so that the ship ranks as a bireme.[4] The forecastle, whence one man is baling out some bilge-water, is protected with merlons [5] and situated right above the metal beak or ram that lies at the junction of prow and keel, below water-line. The cargo-boats are open short craft, with a raised platform on the stern for the helmsman and one row of oars, by no means continuous along the ship. There is no sign of a sail.[6] The flag-ship [7] has a pennon flying from the stern.

(*b*) The Danube Bridge of Apollodorus, and a bridge-head fort (fig. 13). C. xcviii.–xcix.; L-H. 45. Casts, 257–261.

Description

This magnificent bridge was considered one of the wonders of its time, not because of its type, but because of its exceptional size. The land-abutment has stone flood-arches, but the rest of the superstructure, including all the arches over the river, is of wood, carried on stone piers. Two courses below the cradling for the woodwork the piers are decorated with a string-mould, rather badly drawn, as if the artist had been unable to make up his mind whether to give the piers cut-waters or not: this detail therefore remains doubtful. The cradling of timber is shewn, on each pier, by five beams parallel with the stream, fixed upon an unknown number of cross-beams bedded in the top of the pier, and sandwiched in between a second similar series of cross-beams. On this framework, at right angles to the stream, stand twin trestles, in series (a pair to each cross-beam); each trestle delineated as an isosceles triangle, reinforced by a cross-tie from the centre of its inner side to the outermost base-angle.[8] The trestles support a series of joists which carry the roadway planking, and which are firmly held between two sets of longitudinal timbers. But the triangular shape of each trestle was designed so as to enable its outer side to be embodied as the springer of a wooden segmental arch supporting the roadway between each pier. This arch is simplified as three concentric curves in timber, linked with the roadway joists by three more radial timbers. Finally, the roadway was railed with standard-pattern rails, carried by uprights and diagonal cross-spars between them, thus finishing off an admirably balanced piece of carpentry. The end of the bridge was graced by an honorary Arch, with single opening.

The bridge-head fort is a regular structure, with gently rounded angles towards the river:

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[1] Cf. the Arch of Dativus at Mainz or the Heidenthor at Carnuntum.

[2] *B.G.* v, 8, where the skill of the soldiers working cargo-boats is compared favourably with that of those working warships. The baggage is represented by tents in bundles and soldiers' kit hanging from the awning of a cargo-boat. Caesar expected a *navis oneraria* to take about 100 men, as emerges from *B.G.* iv, 22.

[3] Scene lxxix shews a rich variety of these cabin-awnings.

[4] In the *classis Britannica* triremes seem to have been common, cf. *CIL* xiii, 3540–3546: Desjardins, *Géogr. de la Gaule*, i, 367; D. Atkinson, *Classis britannica*, in *Hist. Essays in Honour of James Tait*, Manchester, 1933.

[5] Cf. Caes. *B.G.* iii, 14, mentioning low fortified prows. The improvement was introduced by Gonatas, see Tarn, *Hellenistic Military and Naval Developments*, 149. The early colonial coins of Vienne give a fine representation of the storeyed towers on the prows of the vessels that fought at Actium and were sent to Fréjus.

[6] For sea-going craft with sails, see scenes lxxx, lxxxvii. The Roman sails, with which it was impossible to tack, would be of little service except upon long straight reaches.

[7] Cf. Tac. *Hist.* v, 22, *praetoriam navem vexillo insignem.*

[8] This unsound structure must be due to over-simplification by the copyist.

Fig. 13. The Danube Bridge of Apollodorus, and a Bridge-head Fort.

those towards the front have been sharpened to save space. It contains a head-quarters building, schematically represented by a commandant's pavilion-tent, flanked by granaries of stone, with tiled roofs and high windows at side and end. The sculptor has carelessly missed out some of the lines in perspective. The rampart is either of turf or stone, crowned by merlons widely spaced.

In front of the fort stands an army, for whose welfare Trajan is sacrificing. The legionaries stand at ease, with javelins (once supplied in metal) upright and shields on their arms, but helmets slung over the right shoulder. Three praetorian *signiferi* stand in front in a row, and in front of them the *legatus legionis*, in moulded cuirass, double kilt, breeches and special boots. Trajan, in military undress uniform and bare-headed, is pouring a libation on to an altar bedecked with wreaths. A solemn little *camillus* is at hand with open incense box, and the flute-player is sounding a chord on his double flutes. Behind the Emperor are his suite, the *comites*, at least one officer of high rank among them: and in front of the altar a *carnifex* is leading up a large white ox. The whole scene is unusual for its quiet repose, and the conditions are those which the great bridge across the Tyne at Newcastle may well have witnessed.

Commentary

The representation of the Danube bridge has long been recognised as a classic illustration of its kind, logical in general principles, but condensed in detail owing to the scale of presentation. It may be remarked that the connection of the army with bridge-building was an old one. A gang engaged upon such work brought about one of the most disgraceful scenes [1] of the Pannonian mutiny in A.D. 14, while Caesar's famous

[1] Tac. *A.* i, 20.

bridge[1] across the Rhine recalls well-known difficulties of interpretation. Wooden bridges[2] were still in use on the Via Domitia in Narbonese Gaul during the Augustan age; and the methods of building economically in wood dictate the segmental form of the arches. These methods no doubt inspired the military architects who built the fine stone-arched bridge of Alconetar[3] and the segmental stone arches in the Amphitheatre at Mérida,[4] in Spain; but the Romans did not carry them far in application to masonry.

The Arch at the end of the bridge is worth note. Like that[5] on the bridge at Alcántara, it carries no statue, and was perhaps intended to bear only an inscription. There is also the possibility that it had doors, like the Arch recently discovered on the causeway across the frontier-ditch at Benwell.[6] Beyond the bridge, the *castellum* reveals one of the unlikely combinations shown on the Column. The fort has stone buildings, but a leather tent occupies the site of the *principia*, where we should expect a building at least partly of stone. It is just possible[7] that such conditions existed in small forts while building was going on, and that the artist who drew the scene saw something of the kind. It is more likely that the insertion was made when transferring the drawing to stone, by one who did not know what frontier *castella* were like. The original drawing may have represented only the edge of the *castellum*. From the small-scale representation here the size of the bridge could hardly be guessed. According to Dio Cassius,[8] it was provided with twenty piers, each 150 feet high, sixty feet wide, and 170 feet apart. The wooden superstructure was removed by Hadrian.

(*c*) Frontier-towers and block-houses, with signal-beacons (fig. 14). C. i.; L-H. 5. Casts, 1–6.

Description

This scene is one of the best known on the Column, but is so seldom described in full that an account of it is worth inclusion, as rounding off the glimpses of the permanent organisation of the army which the Column gives.

Two block-houses and three watch-towers, arranged to fit the awkward space at the beginning of the scroll rather than purposely separated into groups, lie on and near the Danube bank. The block-houses are ashlar-built, oblong and one-storied, lit by a square window over a flat-headed door, and covered by a gabled roof. Round them runs an oval or circular palisade, broken by a single gap for an entrance: its stakes are short and stout, with broad points at the top.

The first signal-tower is flanked by two flares of straw, built in tiers on a pole, and by a rectangular beacon of criss-cross logs. All three towers are closely surrounded by a rather tall palisade, conforming to their square plan: the stakes are thin, with broad points at the top, and are held firm by an external longitudinal slat, half-way up the stake. A gap in the palisade faces the tower door. The towers are ashlar-built, in two storeys, but the sculptor has exaggerated the size of the door. The bottom storey is twice as high as the upper

[1] Caes. *B.G.* iv, 17.

[2] Strabo, iv, 1, 12, τινὰ μὲν οὖν τῶν ῥευμάτων πορθμείοις περᾶται, τινὰ δὲ γεφύραις, ταῖς μὲν ξύλων πεποιημέναις, ταῖς δὲ λίθων; Cf. the Rhine bridge at Mainz (Koepp, *Römer in Deutschland*, 89, Abb. 99, 102) and the Mosel bridge at Trier (*op. cit.* Abb. 81).

[3] Cf. Mélida, *Catalogo monumental de España, Provincia de Cáceres*, pls. xxx, fig. 51, xxxi, fig. 52.

[4] *Arch. Journal*, lxxxvii, 113, pl. viii.

[5] Alcántara, Mélida, *op. cit.*, pls. xxvii (plan), xxviii (elevational view), xxvi (general view); cf. St-Chamas, *Bonner Jahrbücher*, 118, p. 316, fig. 8.

[6] *Arch. Ael.* Ser. 4, xi, figs. 1–3, pls. xxii–xxv.

[7] Cf. Clarke, *Roman Fort at Cadder*, 18, for an intermediate stage rather of this kind.

[8] Dio Cassius, lxviii, 13.

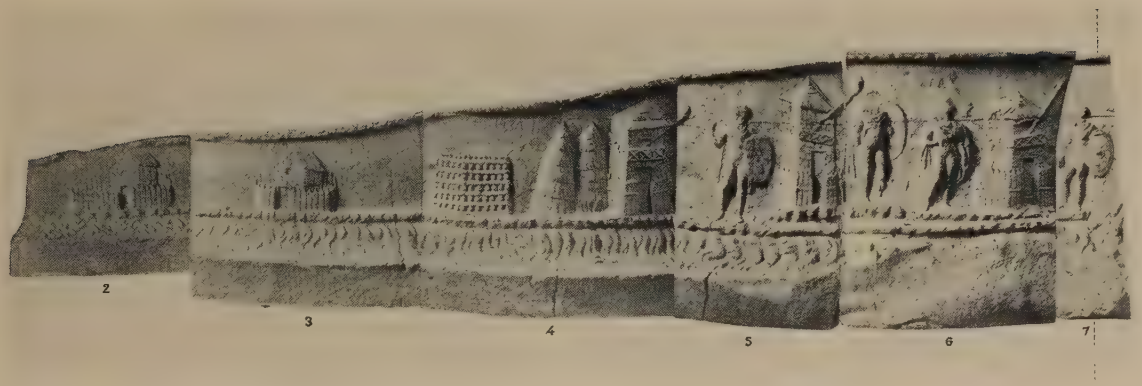

FIG. 14. FRONTIER-TOWERS AND BLOCK-HOUSES, WITH SIGNAL-BEACONS.

one. At the upper-floor level is a balcony of wood, with a railing held by uprights and diagonal cross-slats. It is reached by a door, out of which sticks a long, blazing torch for signalling. The towers are crowned by hipped roofs, of thatch or cut boards, and finished off with an elaborate finial. In carving the roofs, the sculptor has improved upon his first outline, which remains outside them.

Between the towers stand the auxiliary patrol-troopers who manned them. They hold oval shields with prominent bosses and metal-sheathed edges. Their spears, once metal, are now gone. Their clothing is much weathered; but as between the four men can be discerned military boots, knee-breeches, tunic, sword-belt and cloak reaching to the knees. The helmets are indistinguishable.

Commentary

There are two excellent British analogies for the Danube block-houses and watch-towers. The earliest to be discovered was the Cumberland-coast system [1] of watch-towers twenty feet square. This was associated [2] with forts not later than Hadrian in date of establishment, and it is not known whether block-houses formed part of the scheme, though there is reason for suspecting that small posts for the garrison existed. The second example [3] is the chain of towers and block-houses along the road from Strathearn to the Tay. Six of these were towers and the seventh a bigger post, about 100 × 50 feet in size; it is also obvious that the series only formed part of a more extensive and even reconstructed chain. Since the Scottish examples were of wood, there is some reason [4] for thinking that they are early, precursors of the stone towers illustrated here. Their function was to patrol the road and to send messages along it, just as these towers protected the river-traffic, and conveyed messages along its banks. It will also be noted that they are on the further bank of the Danube, beyond the limit of the peaceful province which they guard.

The beacons which stand by the towers, ready to reinforce the torch-lights, were first explained as such by Von Domaszewski.[5]

[1] R. G. Collingwood, *C. & W. Trans.* (*N.S.*), xxix, 151.
[2] *E.g.* Maryport, *CIL* vii, 379–82; and Bowness on Hadrian's Wall.
[3] *PSAS*, 1900–1, 25 *sqq.*
[4] Cf. the German examples dating to Domitian.
[5] *Die Marcussäule*, text, 109, note.

Sir George Macdonald [1] has further pointed out that they betoken two very different types of signal, a fire of long duration from the log-pile and a column of smoke from the straw. The effect in the open air of a log-pile open to the weather and a carefully thatched straw flare, would be, however, that the logs would blaze vigorously while the straw smoked. This is the distinction drawn by Vegetius [2] between day- and night-signalling; *per noctem flammis, per diem fumo significant sociis quod aliter non potest nuntiari*, a statement which implies not only a very simple code, but one which was the last alternative. Indeed, it might be expected that beacons were not often used, since they would set the whole frontier humming. Ordinary messages, of a more complicated nature, were no doubt transmitted with the torch; [3] and Vegetius also describes the semaphore.[4]

It is worth while to note that these towers could only be used for look-out purposes or for signalling by getting out on to the balcony. They have no side-windows, and no effective means of defence except the little palisade round them, which is more in the nature of a boundary. Thus, they are entirely for guard-duties and for signalling.

Sect. vi. The Objects of Attack: Non-Roman Fortifications

It so rarely happens that reliable details are forthcoming about the fortifications which the army had to attack, that two examples are worth study here. Further, it is well known that the Dacians deliberately borrowed features from Rome, and thus these schemes are at once the mirror of Roman work, in an aspect rarely portrayed, and the measure of Dacian intelligence.

(*a*) A Dacian fort (fig. 15). C. xxv.; L-H. 15. Casts, 63–65.

Description

Beaten in battle and afflicted by bad weather, the Dacians are leaving one of their strongholds as the Roman troopers reach it, and set the huts outside it on fire. The Emperor is in the van of his army, and has already arrived inside the enclosure round the huts, consisting of a fence and a stockade. He is interesting himself in stringing a Dacian bow with an arrow, as if testing for himself the quality of the enemy's arms. The houses outside the stronghold are oblong plank huts, with windows at side and end: one, already alight, stands upon wooden legs; the other, still longer, has a door at ground level. The planks are nailed together with large-headed nails.

The ground outside the fort bristles with an entanglement of very stout stakes, and is honeycombed with oblong pits containing pointed stakes. No doubt the pits were originally concealed, but the artist had no other alternative than to shew them to us. The fortification proper is defended by a single ditch, across which a bridge leads to a covered wooden gateway with gabled roof, set in a merlon-capped rampart. Lining the rampart are stakes crowned with skulls, some retaining their flesh, and with them is associated a *vexillum*, perhaps captured. Within the fort is a stone hut on legs and a round stockade; and near them a dragon-standard and a *vexillum* float in the breeze. The rearward rampart can be seen in the extreme background.

[1] *Roman Wall in Scotland*, ed. II, 355–8, pl. lx.

[2] Vegetius, iii, 5.

[3] Cf. the alphabetical code invented for use with torches by Polybius and two colleagues, Polybius, x, 45–7.

[4] Vegetius, iii, 5: *Aliquanti in castellorum aut urbium turribus appendunt trabes, quibus aliquando erectis aliquando depositis indicant quae geruntur.*

Fig. 15. A Dacian Fort.

An uncanny impression is made by this hybrid civilisation, which protects its ramparts with defences of Roman type, but mans them with skulls. One glimpse is enough of how the bodies of living prisoners were treated.

Commentary

Without discussing how much the Romans owed [1] to their enemies in the application of tactical devices to field-works, or how much in turn the more intelligent of their foes borrowed [2] from the Romans, it may be noted how many devices common to the Romans appear here. The approach to the fortress is sewn with a network of *cippi*, essentially the same as those which Caesar [3] designed to stop cavalry charges at Alesia; and the intervals between them are studded with hidden pits containing stakes, evidently larger versions of the *lilia*,[4] which Caesar also employed.

The outworks of the fortress appear to be protected by a palisade, but the main enclosure is surrounded by a dry ditch,[5] crossed by a bridge at the gate, which has a gabled roof, which in other Dacian works [6] usually covers a chamber over the gateway. The gateway is a wooden structure, in which the nail-heads are clearly shewn. It is to be presumed that the rampart to which it is attached is an earthwork, since Dacian stonework depicted elsewhere [7] is either rubble in a wooden framing or very carefully cut ashlar.

[1] Schuchhardt, *Sitzungsbericht der Preussischen Akademie der Wissenschaften, Phil-Hist. Klasse*, 1931, xxiii, 608–634.

[2] See Dio Cassius, lxviii, 9, 5; also Roman artisans in Dacia, Dio, lxvii, 7, 4, δημιουργοὺς παντοίας τέχνης καὶ εἰρηνικῆς καὶ πολεμικῆς. Cf. the Gauls in the estimate of Caesar, *B.G.* vii, 22, *genus . . . ad omnia imitanda et efficienda quae a quoque traduntur aptissimum.*

[3] *B.G.* vii, 73.

[4] *B.G.* vii, 73; cf. *Bell. Afr.* 31, *stili caeci.*

[5] For water shewn in an artificial duct or dike, cf. scenes l, lxxiv, cxxiv.

[6] Cf. scenes xciii, cxii, cxix, cxx, cxxiv: this is exactly the state of the Welsh hill-forts described by Willoughby-Gardner, *Arch. Camb.* lxxxi, 221–282, which all have great post-holes for towers covering the entrance.

[7] Scenes cxiii–cxv (rubble), cxix (ashlar and wood), lxii (ashlar).

It is interesting to compare the wooden huts, mounted upon legs, with those figured as houses of the dead on the Lingonian [1] tombstones of Gaul. A similar dwelling of stone appears inside the fortress, and by the side of it is a circular enclosure like a cattle-pound. These perhaps represent the chief's property, since a *vexillum* and a dragon-standard are erected close by them.

The weapon which Trajan is holding is certainly an arrow, and the attitude in which he holds it suggests that he is about to string it on a bow [2] which he is holding in the other hand; but that part of the representation was supplied in metal and has vanished, leaving the matter open to conjecture.

It may be observed that the Dacians, in placing the heads of their enemies upon poles, are only copying [3] Roman methods, and that both sides seem regularly to have indulged in this form of frightfulness. One set of scenes [4] suggests, however, that the Romans held prominent prisoners to exchange against such of their own men whose deliverance they could secure: for it shews, successively, a camp full of Dacian prisoners (fig. 11), the return of Roman captives, and the Dacian tortures by burning from which these at least were rescued.

(*b*) The siege of Sarmizegethusa; Romans attacking from a fortified circumvallation (fig. 16). C. cxiii.; L-H. .54. Casts, 300–305.

Description

This relief, somewhat weathered in the centre, depicts a vigorous assault on the contoured hill-fortress that formed the Dacian capital. On the left is the Roman siege-camp, complete with officers' tent and men's tents of the usual type. It has a merlon-crowned rampart, without a walk, and is attached, in front of its *porta principalis*, to a circumvallation, which Trajan is later shewn touring. On the Roman side of the circumvallation stand trooper-guards, with different emblems on their shields. Within the circumvallation an assault is in progress, aimed at a weak point in the opposing defences, where their system changes from town-wall to scarped cliff. These differences in system gave to the Romans special advantages in attack.

At the rear of the battle, two praetorian *signiferi* look on, ready to bear their standards forward, and one of them carries, as well as his standard, a little round shield, with a laurel wreath on it. Meanwhile, legionaries and troopers, once more with at least two different kinds of shield, advance, hurling javelins and spears, and shielding themselves from the defenders' missiles. They have to pick their way among concealed pits, of which one is shewn on the extreme right. With them is mixed a force of slingers, attempting to denude the defences by a hail of round sling-bolts. On the left flank, an auxiliary has already applied a ladder to the cliff-face and, mounting it, has cut off a defender's head, which he retains as a trophy.

The defenders are fighting with large lumps of rock, spears, swords and bows. The wall which they defend is not of Roman pattern. It is a *murus gallicus*, of polygonal masonry, crowned by merlons and divided horizontally by a strong framework of beams, passing from back to front of the wall, and held in place by longitudinal beams. At intervals there are wooden towers, with roofs gabled from back to front. Some of these towers have open fronts, in a storey level with the rampart-top: others have numerous smaller windows.

This attack is a feint: the town is already

[1] *Catalogue du musée de Langres*, 1931, nos. 54, 94, 112, 113, 114; cf. Espérandieu, *Bas-reliefs*, iv, 3301, 3293, 3295.

[2] For inferior Dacian bows, see scenes xxiv, xxxii.

[3] Cf. scenes lvi, xxiv, lxxii; in xxiv note the Roman trooper fighting with a head, carried by the hair, in his mouth.

[4] Scenes xliii–xlv.

FIG. 16. THE SIEGE OF SARMIZEGETHUSA; ROMANS ATTACKING FROM A FORTIFIED CIRCUMVALLATION.

falling to an assault delivered at a much weaker point, where the stone wall has given way to an earthwork salient.

Commentary

The *murus gallicus* which protects part of Sarmizegethusa, the Dacian capital, has been fully studied by Jacobi [1] in connection with the second fort at Saalburg, which possessed a rampart of this type. But the type is very rare in Roman work, and is most commonly associated with Continental native strongholds, and a few Iron Age forts [2] of Britain. It is to be noted, however, that the whole of this very large circuit is not fortified in the same way. In the present scene there is a point where cliffs take the place of a defence constructed by man, and the Romans have hit upon this weaker sector as an object of attack. A subsequent scene [3] shews a sector depicted in the same convention as is used for Roman earthworks, which the Roman assailants are demolishing with *dolabrae*: and it appears that this is another awkward point in the defences, where they make a prominent salient, open to flank attack and thus exceptionally weak.

It may be noted that the *murus gallicus* is associated with the three similar machines which stand just outside it, well in advance of the Roman lines. These have been variously explained,[4] on the supposition that they represent some sort of machine of assault or defence. But it may be remarked that all other Roman siege-machinery is well provided with a crew [5] to work it, if not protected by pent-houses; [6] while this, on the other hand, is lying in the open just below the wall, without attracting the attention of defenders. On this ground alone it is difficult to believe that it can be connected with warfare. Structurally, it is clear that these implements are not fitted to make an assault. They are not *onagri*, for two essential parts of that machine are missing:

[1] Jacobi, *Saalburg Jahrbuch*, iv, 24.

[2] Caes. *B.G.* vii, 23; cf. Childe, *PSAS*, lxvii, 387, *ibid.* 369, fig. 3, Castlelaw, and *Antiquaries' Journal*, xiii; Hawkes, *Antiquity*, v, 71–2, figs. 6 (Uffington), 8 (Uffington and St. Catherine's Hill), pl. ii, 85 (Corley); *Antiq. Journal*, xi, 22 (Cissbury); *ibid.* xiv, 17 (Titterstone Clee).

[3] Scene cxvi.

[4] Cf. Cichorius, iii, 229–232.

[5] Scene lxvi, a *ballista* mounted on a *tribunal*.

[6] Scene lxxv.

the free arm has no sling at the end of it, and is not retained at the point of action by the transverse buffer which gives the sling motive force.[1] Nor are they battering-rams: for these terminate in a blunt point, intended to disintegrate [2] the wall, rather than a great hammer, which would only consolidate it. As for defence, it has been suggested that they were a sort of man-trap,[3] like the λύκοι of Belisarius, which, counterbalanced by the weighted arm, would fall over upon the enemy. But it is quite impossible to see from the illustration how this could have worked. Describing the machines afresh, they are great hammers, attached to a triangular wheeled carriage, of which the back axle or frame is provided with large spikes like a harrow, for holding the carriage firmly in position when it was not desired that it should be in motion. Thus, the machines are, in effect, very large hammers, mounted upon a chassis. It may therefore be suggested that they are the *festucae*,[4] or pounders, used in the construction of a *murus gallicus*, for ramming the core tightly in its frame of stone and wood: and their presence here will indicate that this part of the fortification was newly completed, shortly before the arrival of the Romans. It will be noted that it is protecting an important and modern [5] part of the capital, for a large portico may be seen in the background. It is also evident that, in addition to the main circuit of the huge town, there was some kind of citadel, presumably containing the royal and noble quarters; for this is what the Dacians [6] are shewn to be burning, after a lull in the operations, during which the Romans are occupied in gathering logs for building the *tribunalia* [7] that were to carry artillery for a bombardment. Rather than await an attack on the citadel, which would certainly succeed,[8] the Dacians burnt it and retired.

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[1] Schramm, *Die antiken Geschütze der Saalburg*, Abb. 33, 34, Taf. 10, based upon Amm. Marc. xxiii, 4, 5.

[2] Vitruvius, i, 5, 5; Veget. iv, 14; cf. scene xxxii.

[3] Procop. *B.G.* i, 21; see Cichorius, iii, 229–232.

[4] Cf. Caes. *B.G.* iv, 17; Vitruv. iii, 3 *intervalla . . . solidanda festucationibus*.

[5] See p. 37, note 2, for the recent importation of Roman builders.

[6] Scene cxix: the Romans finally planted their camp in one angle of the native fortress, see scene cxxv; cf. Hod Hill, *Wessex from the Air*, pl. i.

[7] Scene cxvii, cf. lxvi.

[8] Frontinus, *Strategemata*, iii, 5, 2: '*Ti. Gracchus, Lusitanis dicentibus in X annos cibaria se habere et ideo obsidionem non expavescere, 'undecimo' inquit, 'anno vos capiam'*.'

STUDIES IN THE SOCIAL AND ECONOMIC HISTORY OF OSTIA: PART I.

By FREDERICK H. WILSON

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SERIOUS excavation of the archaeological remains of Ostia really began only in the early years of the present century. Spasmodic work upon the site was, it is true, undertaken during the eighteenth and nineteenth centuries, but the earliest excavators, De Norogna, Volpato, La Piccola, Hamilton and Fagan, were little more than treasure-hunters, more intent upon gaining possession of some artistic masterpiece than upon elucidating the problems of the past. Even the distinguished archaeologists of the nineteenth century, Visconti, Lanciani and Gatti, worked at Ostia only spasmodically, and often failed to publish adequate accounts of their discoveries. Nor were serious attempts made to protect from the ravages of rain and frost the buildings unearthed. The present writer has spent many an anxious hour attempting to identify at least the position of some building excavated little more than half a century ago, but which is now no more than a mass of tumble-down bricks and mortar, long since overgrown. Systematic excavation may be said to have commenced in the year 1908, under the direction of Vaglieri, and since that date practically every year has seen further progress made, so that to-day the site, it is not too much to claim, is to be ranked second only to Pompeii in archaeological importance.

Apart, however, from the detailed accounts of excavations published in *Notizie degli Scavi* and elsewhere, the literature appertaining to the site is still scanty. Practically everything published prior to the year 1908 is now out of date except as a statement of what actually was unearthed, whilst Paschetto's monumental work suffers from the handicap of having been published during the first few years of systematic excavation, before any considerable area had been covered. The only reasonably complete account of the excavations is to be found in Calza's small handbook, which has been constantly brought up to date, and which gives an account of all but the most recent discoveries. In addition to these books there is a number of excellent articles in periodicals by Calza, Paribeni, Carcopino and others.

The majority of these, however, are purely archaeological, and deal primarily with buildings and inscriptions, and only incidentally with the historical development of the city. It is perhaps only in the last few years that it has become possible to attempt anything resembling a consecutive history. The present writer has studied Ostia primarily from the historical point of view, and he hopes that,

great as are the inevitable gaps in his work, he has shewn that this colony, like Pompeii, may now be studied with advantage from this aspect.

Ostia appears to have been founded in the fourth century B.C. as an extremely small citizen colony designed to protect the coast. Owing to its geographical position at the mouth of the Tiber it quickly grew, and by the beginning of the first century B.C. it had already become a city of the first importance as the port of Rome. Its destruction by the soldiers of Marius caused a temporary set-back, and for a period Puteoli prospered at its expense. However, the construction of the Claudian harbour—later enlarged by Trajan and improved by another Emperor, probably Septimius Severus—ensured its supremacy over its rivals. From the period of Domitian to that of Antoninus Pius, Ostia was at the height of its prosperity. Under Marcus Aurelius came the commencement of the collapse, which continued under the Severan Emperors, and by the middle of the third century trade appears to have deserted the ancient city and to have betaken itself to the suburb round the harbours of Claudius and Trajan. The final death-blow was dealt by Constantine, who recognised that the city at the mouth of the Tiber was no longer of importance, and constituted Porto a separate town.

It would be ungracious to conclude this preliminary section without thanking my numerous friends in Oxford and in Rome for their help and encouragement so generously offered. I owe in particular a great debt to Mr. I. A. Richmond, late Director of the British School at Rome, and to Mr. R. Meiggs, of Keble College; to the former for his continued interest in my work, for his frequent visits with me to Ostia, and for his readiness always to give me the benefit of his experience; to the latter for suggesting the history of Ostia to me as a subject of research, and for his constant encouragement and advice.

I.

It is only in comparatively recent years that disputes have arisen among scholars as to the date of the foundation of Ostia. Ancient tradition,[1] dating back at least to Ennius, is unanimous in affirming not only that this was the oldest of Roman colonies, but also that it was founded by Ancus Martius. After destroying Ficana, the only city between Rome and the sea, this king is said to have founded the new city of Ostia in order to guard the mouth of the Tiber and also to enable the salt-marshes in the vicinity to be worked. Pais and De Sanctis [2] were the first to question the truth of this tradition, and their doubts have been reinforced by the results of recent excavation. No remains have yet been found earlier than the walls of the so-called 'castrum,' [3] and these are constructed of a peculiar type of tufa,[4] quarried only in the neighbourhood of Fidenae, in the territory of Veii. It would be difficult to place the foundation of the colony earlier than the building of its first stone defences,[5] and Fidenae tufa can hardly have

[1] Ennius, *Ann.* II, frag. 75–6; Polybius, VI. 2. 9; Strabo, 5. 3. 5; Cic. *de Rep.* II. 3. 5 and II. 18. 33; Liv. 1. 33; Dionys. III. 44; Fest. p. 197 (Ostiam); Aur. Vict. *de vir. ill.* 5. 3; Eutrop. 1. 5; Serv. ad Aen. VI. 815; Hieron. *Chron.* p. 334; Steph. Byz. 318. 34; Isid. *Orig.* XV. 1. 56.

[2] Pais (*Storia di Roma*, I. p. 470) sees in the tradition a legend glorifying the family of the Marcii; De Sanctis (*Storia dei Romani*, I. p. 383) believes in a double colonisation of Ostia.

[3] Calza, p. 25. N.S. 1914, 244; 1923, 178. *Amer. Journ. Phil.* 1924, 64.

[4] *Vid.* Frank, *Roman Buildings of the Republic*, especially the chapter on 'Roman Tufas and their Provenance.'

[5] Yet Saeflund, *Le Mura di Roma Repubblicana*, p. 239, whilst dating the foundation of the colony to the fourth century, wishes to assign its walls to the third or even second. But, as Richmond (*JRS.* 1932, XXXII. p. 236) points out, 'Latin colonies had walls from the first, and so therefore had Roman ones.' In any case Saeflund's thesis, that the facing of Fidenae tufa on the Palatine is as late as the year 217 B.C., even if considered proved, would not necessitate the dating of the wall of Ostia to an equally late period.

been used by the Romans until the capture of Veii in the fourth century made them masters of that region.

It must be admitted, however, that the question as to the date of the foundation of the colony cannot be considered as having been decided definitely. It is possible, even probable, that settlers lived in an unfortified village on or near the site from a much earlier period. Nor are we yet able to trace in any detail the stages of its early development. All that can be said with any certainty is that the colony quickly outgrew its original purpose, if the purpose really was, as has been suggested, the defence of the coast of Latium. The fact that one of the new *quaestores classici*, who were created in 267,[1] came to be known as the *quaestor Ostiensis*, illustrates clearly the growing importance of the city; by the middle of the third century Ostia was no longer merely a fort serving to protect a section of coast-line, but had already become the base of the fleet, and perhaps already something of a port. During the Second Punic War the city is frequently referred to by our literary authorities; thus it was from Ostia that the supply ships sailed for Spain in 217;[2] after Cannae 1500 sailors from the fleet at Ostia were sent to Rome;[3] whilst in 208 we hear of thirty warships at Ostia being in need of repair.[4]

This growth is to a certain extent illustrated by the results of excavation. Thus it appears highly probable that the city walls passed out of use at an early period. Abutting on the outside both of the eastern and of the western walls of the *castrum* stand other walls of Grotta Oscura tufa, showing clearly that when these were built the *castrum* wall had passed out of use. The first condition for the successful defence of any wall is that there shall be an open space immediately in front of it. Similarly, as will be seen below,[5] between the sites of the later Round Temple and the House with the Atrium, a house of the atrium type seems to have been built immediately over the southern *castrum* wall. This house, it is true, cannot date from a period earlier than the second half of the second century B.C.,[6] but the walls of Grotta Oscura tufa to the east and west of the *castrum* may well go back to the third.[7]

For it is certain that buildings were erected well outside the limits of the *castrum* wall at quite an early period. At about 160 metres to the east of it, beneath the Sullan Four Temples, a considerable amount of clay was found in such a position as to lead Paribeni to infer that walls of sun-baked bricks once stood there.[8] This building, if we may judge from the evidence of such pottery and coins as were found, dates from the beginning of the second century B.C. Even further out, however, remains of a yet earlier period have been found. In the neighbourhood of the Sullan Porta Romana, approximately 600 metres beyond the eastern *castrum* wall, the foundations of two brushwood huts have been discovered, together with a tomb dating from the third

[1] Liv. *Epit.* 15; Lydus *de Mag.* 1. 27. Cf. Mommsen, *Rom. Stadt.* II. p. 570; Herzog, *Rom. Staat.* I. pp. 823–5.

[2] Liv. 22. 11.

[3] Liv. 22. 57.

[4] Liv. 27. 22. For further references to Ostia cf. Liv. 22. 37; 23. 38; 25. 20; 26. 19; 27. 38.

[5] P. 47.

[6] The material used is unfaced concrete. Admittedly extremely few examples of the use of concrete (except in the *podia* of temples) of a date prior to the age of Sulla have survived. But the knowledge and skill in its use shewn by the Sullan builders shew that it must have been introduced at an earlier date; no one would build a city wall, for example, in a hitherto untried material. My reason for assigning this house to the pre-Sullan period is that all other Sullan concrete in Ostia, and, so far as I know, throughout Latium, has a good face either of *opus incertum* or of quasi-reticulate. But this concrete, which is of the early bluish-grey variety and contains no trace of *pozzolana*, has no facing of any kind.

[7] Grotta Oscura tufa was first used in the fourth-century wall of Rome, and continued in general use down to the second century.

[8] *Mon. Ant.* XXIII. 442.

century.[1] It is, admittedly, possible that these huts were isolated structures separated from the main buildings of the colony by an area of unoccupied land. On the other hand, if this were so, it is a remarkable coincidence that the area chosen for a thorough examination of the sub-soil was the area where these huts stood; even to the east of the *castrum* it has only been possible to examine the sub-soil in a comparatively few places. It would seem more probable that, with the development of Ostia as a seaport and as a naval base, the colony quickly grew, extending far beyond the limit of its original walls. Unfortunately no examination of the sub-soil has been possible to the south or west of the *castrum*.

Apparently almost all the very early buildings, even inside the *castrum*, were constructed of materials less durable than stone. The material used in the *castrum* walls was the variety of tufa which is quarried in the neighbourhood of Fidenae. Yet nowhere else in Ostia, except in certain late buildings the tufa for which has obviously been taken from the wall itself, is this stone used. On the other hand, quite a large amount of Grotta Oscura tufa, together with a smaller amount of Anio tufa, may still be seen *in situ* on a very low level, especially inside the *castrum*. Owing to the fact that this tufa has only been found in the course of the excavation of later buildings, no attempt can yet be made to map out the plan, or even to determine the nature of the earlier buildings. Yet it does seem certain that large areas of the city were once occupied by buildings of Grotta Oscura and of Anio tufa, and, since there can have been no reason for discriminating between the types of stone, or for preferring Fidenae to Grotta Oscura tufa for the wall,[2] it seems probable that few, if any, of the buildings, even of Grotta Oscura tufa, were original. It is much more likely that the first structures erected, even inside the *castrum*, were of wood, sun-baked brick, or other impermanent materials, and that during the third and second centuries these were replaced by others of stone.

It is regrettable that the development of the city during these centuries cannot be traced in greater detail. How far this development had progressed, however, by the beginning of the first century may be seen by a comparison of the area enclosed within the Sullan wall with that enclosed within the *castrum*. It is most unlikely that the Sullan rebuilders, foreseeing the future greatness of the colony, enlarged the circuit of its walls in order to allow for expansion; for the wall has the appearance of being a hurried piece of work, rapidly constructed as a safeguard against the possibility of future attack, whilst Sullan Ostia shews little sign of town-planning, and the rebuilding of the city, as will be seen below, appears to have been conducted spasmodically. It is much more probable that the wall was constructed so as to enclose the area upon which buildings had been standing. Yet the area now enclosed covered no less than 70 hectares, whereas the original *castrum* had covered only 2·3 hectares. By the time of Marius Ostia had grown into a large city, well worth plundering. No attack was made upon the colony until its communications with Rome had already been cut, so that from a tactical point of view there could be little justification for its destruction.[3] The attraction of Ostia to Marius must have lain in its wealth.

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[1] N. S. 1911, 280. 448. *Year's Work in Classical Studies*, 1911, p. 12.

[2] It is not even possible that the Romans held the belief that Fidenae tufa was more suitable for a city wall than Grotta Oscura. For the latter was certainly used in large quantities in the fourth-century wall of Rome. Saeflund (*op. cit.*) even believes that it was the sole material used in it, the Fidenae tufa with which it is associated on the Palatine being introduced during later repairs.

[3] App. *B.C.* I, 67; Florus, 3. 21. 12; Liv. *Ep.* LXXIX.

II. i.

Even though Ostia may have received self-government during the third or second centuries B.C., it is only during the first century B.C. that information becomes available as to the type of man who held municipal office. Detailed *tituli* indeed are still scanty, and for the period beginning about the middle of the first century B.C. and ending with the close of the first century A.D., the greater part of our knowledge must be derived from a study of the names of magistrates and other officials.

In the first place there is the evidence of cognomina, eleven of which are known to us—Severus, Rufus, Dexter, Carbo, Gratus, Africanus, Longus, Optatus, Montanus, Poplicola and Tertius; now when manumitted a slave retained as *cognomen* the name by which he had previously been known, merely taking the *praenomen* and *nomen* of his patron; there thus sprang into existence a special class of 'libertine' *cognomina*. Admittedly, since a father would seldom wish to label his son for life, there was also a general tendency for 'free' cognomina to replace the 'libertine' in the course of several generations; thus the son of C. Silius Felix, a freedman, was C. Silius Nerva.[1] Yet it can hardly be without significance that of the eleven names which have come down to us not one is Greek, though Greek *cognomina* were especially common among freedmen, not one is definitely 'libertine,' and several, such as Poplicola, Montanus, and Carbo sound 'free.' The contrast indeed with the *cognomina* of the upper classes during the following century[2] is so marked as hardly to be explicable save on the theory that the late years of the first century saw a strong tendency on the part of the previous aristocracy to leave the city, and saw them replaced by *nouveaux riches*. This theory, moreover, appears to be confirmed, in that, of the 21 families whose members are known to have held office before the Principate of Trajan, no Vitellius, Paetinius, Avianius, Cuperius or C. Arrius is ever heard of in the city again. Of the remainder, the great majority reappear only in inscriptions which cannot be dated, and descendants of two[3] only of the 21 families are known to have held responsible posts in Ostia.

This early aristocracy would appear to have been landed if the cases for which we have evidence may be taken as typical. M. Acilius,[4] for example, must have owned land if, as is surely the case, he is of the family of the M. Acilius Caninus,[5] who at an unknown date before 28 B.C. was *quaestor urbanus* at Rome, and therefore of the senatorial order, but whose statue seems to have been erected at Ostia. Another magistrate, T. Sextius Africanus,[6] was probably an elder relative of the consul of the same name of A.D. 59. A third, P. Lucilius,[7] was undoubtedly an ancestor of the P. Lucilii Gamalae,[8] who were very prominent in the city during the second century, and who at that time were certainly not traders and were probably landowners. Similarly, it is not improbable that the A. Egrilii[9] were already landowners as they must have been in the days of the senatorial A. Egrilius Plarianus,[10] whilst it is perhaps not without significance that the *titulus* of C. Tuccius[11] was found in a tomb outside Ostia, 'near the eighth milestone from

[1] 415.
[2] A list of these cognomina is given on p. 59.
[3] Viz. P. Lucilii and M. Acilii.
[4] 4531.
[5] 153.
[6] 4535.
[7] 4534.
[8] 375–6. While giving detailed accounts both of their benefactions and of the offices they have held, the Gamalae never refer to any college or to offices in them. It is difficult to believe that any trader of the second century could have afforded to neglect the colleges. *Vid. inf.* p. 63.
[9] 4532*a*; 4535.
[10] For the family of the Egrilii cf. 281, 346, 399, 2212, 4442–5.
[11] 426.

the Basilica of S. Paolo,' that is to say, halfway between Rome and Ostia.

If our theory be correct we might expect to find little trace of the names of a proportion of these aristocratic families outside Ostia and perhaps Rome; for traders are always more ready to move than people tied by their estates, whilst it is reasonable to suppose that the descendants of their freedmen would often, if they moved at all, merely drift into Rome. It causes us little surprise, therefore, when we find that in the whole of the indices of the Corpus of Latin Inscriptions,[1] excluding volumes VI and XIV, there are to be found references only to 5 P. Lucilii, 4 A. Hostilii, 2 C. Cartilii, 2 M. Suellii, 1 P. Paetinius, and 1 A. Egrilius, whilst actually not a single C. Cuperius or A. Genucius is ever heard of outside Ostia. The figures for the rich traders of the second century are very different.[2]

Yet the existence of a large class of traders resident in Ostia can hardly be doubted. It appears that these were in practice deliberately excluded from office, which was confined to the members of a comparatively few aristocratic families. In the course of three years (46–44 B.C.) a Q. Vitellius was twice, and an A. Vitellius once duumvir. P. Paetinius Dexter[4] held office twice. The two A. Egrilii Rufi[5] held between them the duumvirate five times, and the elder was also pontifex. Q. Fabius Longus[6] was praefectus, and in the following year also duumvir, an honour which he claimed was itself held for the second time. A. Genucius[7] similarly is twice, and Postumus Plotius[8] four times duumvir, whilst C. Cartilius[9] attained that office no less than seven times, and was 'censor' three times. Yet after the Principate of Trajan there is scarcely an example of the duplication of offices;[10] the last men who are known to have held the duumvirate more than once being C. Nasennius Marcellus and C. Valerius Iustus, who in the year 111 were duoviri for the third and second time respectively.[11] It must be concluded not only that the early aristocracy was composed of people who were more willing to undertake the burden of office in return for a mere empty honour than were the business-men of the second century, but also that office was confined to the members of the most prominent families in the city. The constitution of the city, by which magistrates were elected *decreto decurionum* instead of *in comitiis*, was specially favourable to the maintenance of an oligarchy of this kind.

II. ii.

Even though our theory of the existence of a strong landed aristocracy during this period is based primarily upon epigraphic evidence, it does not conflict in the least with what we can learn of first-century Ostia from other sources. This part of the Campagna was not then, as it has been up to recent years, a barren waste, its infertility developing only through neglect in

[1] In compiling these figures no account has been taken of inscriptions such as several of those of the Egrilii, which are recorded in other volumes of C. I. L., but which are really Ostian, being removed thence only in the post-Roman period.

[2] Practically all the *nomina* of second-century Ostian families recur in other volumes of C. I. L.

[3] 4531.

[4] 4533.

[5] 4533–5. The most natural interpretation of 4535 appears to be that the two Egrilii were father and son, and that the elder died during his term of office as duumvir; his colleague then resigned, on the principle that a duumvir must have a colleague and two praefecti were appointed, one of whom was Egrilius Rufus the younger. But cf. N. S. 1917, 186.

[6] 4535; cf. the previous note.

[7] 4710.

[8] 4710.

[9] 4710.

[10] The only example appears to be that of P. Aufidius Fortis senior, who during the financial crisis of Commodus' reign held the office of quaestor aerari five times. Despite C. I. L., 4452 is probably to be interpreted 'q(uin)q(uennalis) c(orporis) p(istorum).'

[11] Cf. a new fragment of fasti recently published by Calza in *Boll. Stud. Med.* III. iv. (Oct. 1932).

the post-Roman period.[1] According to the elder Pliny,[2] Ostia was noted for its scallions and mulberries, whilst even at a later date[3] its melons were famous. It seems clear that a considerable proportion of the citizens of Ostia must still have devoted itself to the pursuit of market gardening and agriculture. The territory of Ostia was of great size, apparently extending so far north as to border on those of Caere and of Veii, and its produce must have commanded a ready sale in Rome.

The extant archaeological remains of the period suggest that Ostia was still a small but prosperous country-town. No less than six private houses[4] of the period have been excavated to a sufficient extent to enable it to be seen that they resemble the Pompeian style of house much more closely than they do the later Ostian style. They are all of the *atrium* type, wasteful of space; several appear to have been connected with shops in the Pompeian manner, and there is no evidence that any of them possessed a true upper storey. On the other hand, they tend to be smaller than the average Pompeian house, and no peristyle has yet been excavated. It must be inferred that land was already too valuable to permit of space being wasted on the unessential, even though the population had not risen to such an extent as to necessitate the adoption of a new style of domestic architecture. It was not until the last decades of the first century that the *atrium* type of house began to be replaced by the 'city' type, which will be discussed further in another section. This change was thus approximately contemporary with the change in the character of the governing classes of the city.

Nor do the results of excavation up to the present suggest that Ostia had yet become the important commercial *entrepôt* that it became at a later period. With the exception of the republican *navalia*, of the Claudian or Neronian Large Horrea, and of the central portion of the

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[1] Even during the twelfth century Richard Cœur-de-lion was able to land at Ostia with his horsemen, and to ride south during the heat of the summer. Yet to-day, after the great improvements recently made in the drainage, etc. of the Campagna, such an undertaking would involve a grave risk of malaria.

[2] Plin. *H. N.* 15. 24; 19. 6.

[3] Cordus, ap. Capitolinus, ed. Peter (1884), p. 175.

[4] They are the following: (1) The house referred to above (p. 43). Midway between the site of the later Round Temple and the House with the Atrium are the remains of what can hardly be other than an *impluvium*, with hydraulic mouldings. At each corner of it are concrete blocks, which must have served either as the bases of concrete piers or else as the foundations of columns, whilst near by are the remains of concrete walls together with one other concrete block similar to the above. Whilst sufficient does not remain to enable the original plan of the house to be reconstructed, it is clear from the presence of an *impluvium* that the house was of the *atrium* type, whilst it is probable that it covered an area greater than any other of the pre-Domitianic houses. For its date cf. p. 43, note 6. It appears to have continued in use at least down to the second century.

(2) (3) and (4). Three houses on the Street of the Republican Houses. These were built probably in the early first century B.C. and continued in use down to the last decades of the first century A.D., being repaired on a number of occasions. All are of the *atrium* type, the central one being the largest, and bearing a marked resemblance to the House of the Surgeon at Pompeii. The rooms facing the street served as shops, as at Pompeii, and were connected with the houses. A flight of stairs in one of the shops probably led merely to the small sleeping apartment of a slave. There are no signs of stairs in the houses.

(5) The House of Apuleius. This house presents many unsolved problems to the archaeologist. Certain walls in it appear to date from the age of Augustus or Tiberius, and it is possible that the house itself goes back to this period, though it is equally possible that it was converted into a house from some other type of building under the Flavians. It continued in use down to a late period, and was so much altered and restored that it is now impossible to reconstruct its original plan. The style of one of the rooms, however, suggests that it served originally as an *atrium*, the *impluvium* being replaced by a later fountain. The staircase is not original, *Vid.* Calza, p. 117.

(6) The House with the Atrium. This house was altered, indeed almost rebuilt, under the Severi. Part of the original walls were, however, incorporated in the later reconstruction, and it seems clear that it dates from the middle of the first century A.D. The rooms to the east undoubtedly followed the lines of those of the original building, even after the reconstruction; on the other hand, the house was originally entered from the north instead of from the south, and the openings in the foundations of the original walls to the north on each side of the doorway are so wide as to suggest that the rooms to the north served as shops. But there is no evidence to show whether these shops were connected with the house, or whether the house had an upper storey.

so-called Republican Warehouses, which probably housed a small manufacturing business, but which were certainly never used as warehouses, not a single industrial or commercial building constructed prior to the second century has yet been unearthed. There is even reason to believe that the view that the Square of the Guilds was designed from the first for the purpose of housing representatives from the various parts of the empire is incorrect. It is much more probable that the rooms beneath the Portico of the Guilds were throughout Ostian history let to whoever wished to occupy them, and that these representatives tended in the course of time to come to this building merely because by its nature and position it was especially suited to their purpose.[1]

This slow development of Ostia is probably to be attributed ultimately to the damaging effects of the sack of the city at the hands of Marius.

Even if our literary authorities had been silent on the question, the completeness of the destruction of almost the entire area which has already been excavated [2] would be amply proved by the vast amount of rebuilding undertaken during the period from Sulla to Augustus. Yet had this rebuilding been conducted systematically, it is probable that the ill effects of the destruction of the city would have been minimised. As it was, it seems to have been nobody's business to attend to the rebuilding, and 'temporary' structures may have continued in use in parts of the city for over a century.

Five periods in the rebuilding in more permanent materials are to be distinguished. In the first place, the city wall, together with one or two buildings near the centre of the city, is faced with what should really be described as *opus incertum* rather than quasi-reticulate, and probably dates from the period immediately following the destruction of the city. Next come the buildings in the Square of the Four Temples, in which the *opus incertum* has developed into a real, if poor, quasi-reticulate. Much better than this is the facing of the so-called Republican Warehouses and of other buildings in the neighbourhood of the Porta Romana. The Portico of the Guilds, and the theatre, which is dated by an inscription to the early years of the Principate of Augustus,[3] show a still further advance, the quasi-reticulate having by this time developed into real reticulate. Finally, the brick facing of the Large Horrea shows that they date from the age of Claudius or Nero. Yet under none of these buildings have remains of any kind been discovered,[4] a clear indication that no permanent structure stood on any of these sites prior to the erection of the building named.

Either, then, the large areas of the city lay unoccupied for very long periods, or else they were occupied merely by light buildings, of which no traces have been found. The latter is perhaps the more probable alternative, for at more than one point [5] the earth backing of the city wall was hacked away under Augustus or Tiberius in order to create additional space for a building. Either alternative, however, suggests that all was not well with the city. Had Ostia been prosperous, temporary structures would quickly have been replaced by permanent ones.

The truth seems to be that Puteoli, the alternative port of Rome, seized the opportu-

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[1] The writer hopes that it will be possible for him in another paper to discuss this question more fully.

[2] But it is to be noted that the eastern part of the city, upon which the excavators have concentrated up to date, would be more likely to suffer in an attack from the direction of Rome than the remainder.

[3] 82; the restoration of this inscription should, however, be classed as probable rather than certain.

[4] Except that pre-Sullan remains have, as has been seen above, been found beneath the Four Temples.

[5] For example, at the 'Tower of Sulla' and at the Porta Laurentina.

nity presented by the destruction of its rival. Puteoli indeed had many advantages, which would more than counterbalance the disadvantage of its great distance from Rome, and, if it once gained the supremacy, it would not be likely to forego it without a struggle. Ostia[1] lacked a good harbour, and the river-mouth, in which small boats moored, required constant dredging, whilst large boats were compelled to stand out to sea and to discharge their cargoes by lighters. In addition to the inconvenience involved, there was always the risk of damage to vessels in bad weather. Furthermore, the site of Ostia has always been unhealthy, by reason of its proximity to the salt-marshes, and the low level of the pre-Domitianic city must certainly have enhanced this defect. It was here that, even after the improvements brought about by Domitian and his successors, St. Monica contracted the fever of which she died,[2] whilst to-day the excavations on the pre-Domitianic level are under water for the greater part of the year. Yet the alleviation of a good water supply in all probability came comparatively late; the earliest *fistulae* yet found bear the stamp of the Emperor Gaius,[3] whilst all the pre-Domitianic houses possessed *impluvia*. Perhaps, however, the most serious hindrance to the development of the city as a commercial *entrepôt* lay in the fact that ships putting in here would be unlikely to obtain return cargoes. There was still a considerable export trade from Campania, whilst that of Rome was negligible.[4] It would require considerable compensations in other respects to counterbalance this defect in the eyes of shipowners.

How far the prosperity of Puteoli had advanced by the end of the republican era may be seen from some of Cicero's speeches. Vatinius[5] found it necessary to interfere with the trade of Puteoli in order to prevent an excess of silver from going to the East. Citizens of Puteoli, presumably representatives or members of firms dealing with Sicily, suffered in large numbers at the hands of Verres.[6] Puteoli was the port to which the ships of Rabirius Postumus[7] came. It was here that the envoys from Alexandria[8] landed, just as it was here that the boat bearing St. Paul[9] put in. Other writers, too, testify to the importance of Puteoli. Diodorus Siculus[10] uses the illuminating phrase εἴς τε Δικαιαρχίαν καὶ εἰς τὰ ἄλλα ἐμπόρια, implying that Puteoli stood first, and that the rest were far behind. Even the elder Pliny,[11] by whose time Ostia was beginning to recover, implies that Ostia traded mainly with Spain, Narbonese Gaul, and Africa, whilst Puteoli dealt with Sicily, Egypt, and the East generally.[12] By the second century, when the recovery was complete, there were complaints that the trade of Puteoli was not what it used to be.[13]

The one class of import which never seems to have been diverted from Ostia was that of corn. As early as the time of the Second Punic War we hear of corn being stored in Ostia for the use of the troops;[14] Cicero in his defence of Murena refers to the latter's work in supervising the passage of corn through Ostia;[15] whilst after the great fire in Rome

[1] Strabo, 5. 3. 5.
[2] Augustine, *Confess.* I. ix, c. x–xi.
[3] 5309. 9.
[4] Frank, *Econ. Hist.*, 2nd edn., pp. 411–12.
[5] *In Vat.* v. 12.
[6] *In Verr.* II. v. 154.
[7] *Pro Rab. Post.* xiv. 20.
[8] *Pro Cael.* 10.
[9] Acts xxviii. 13.
[10] Diod. Sic. 5. 13. 2.
[11] Plin. *H. N.* 19. 3.
[12] Other references shewing the prosperity of Puteoli during this period are: Cic. *Fam.* XIII. 56. 1; *Att.* 4. 10; *pro Planc.* 6; Suet. *Tit.* 5; Jos. *Ant.* 18. 7. 2; C. I. L. X. 1797. cf. Stat. 3. 5. 74.
[13] Philostrat. *Apoll. Vit.* 7. 16; Flor. I. 4: cf. Frank, *Econ. Hist.* p. 411.
[14] Liv. 25. 20.
[15] *Pro Mur.* 8. 18.

under Nero sufficient food is said to have been available in Ostia and the neighbouring cities to feed the whole population of Rome until further supplies could be brought.[1] It is noteworthy too that the one great warehouse [2] of any kind yet excavated in pre-Domitianic Ostia was undoubtedly, as can be seen from the ventilation of its floors, used as a store-room for grain. But it is natural that the grain ships should have been brought to Ostia, if at all possible. The threat of famine was never far distant from ancient Rome, and it would have been most inconvenient in an emergency to have to send for further supplies to a port separated from the capital city by a distance of some 120 miles. Ostia was always the centre of the corn-trade; but there is no evidence that imports of other kinds came here to any great extent prior to the building of the Claudian harbour.

II. iii.

It was indeed most inconvenient for Rome to be separated from its harbour by a distance of some 120 miles. Transport by land was in the ancient world always slow and expensive, and Ostia was clearly marked out by its position to be the main harbour of Rome. One at least of the disadvantages which weighed against its prosperity might have been removed at an early date; an adequate harbour might have been built. But the Roman senate was always singularly indifferent to the interests of trade and commerce, and the first statesman to see the necessity of improving the port of Ostia seems to have been Julius Caesar.[3] Even he was deterred, however, by the difficulties of the task, and it was left to Claudius to initiate the new building programme. It is true that one ancient writer [4] ascribes the building of a harbour at Ostia to Augustus; but this is probably merely a false deduction from the name Portus Augusti.

The original Claudian harbour [5] was a comparatively primitive affair, two curved moles being made to project into the sea as a protection against the elements, whilst a light-house was built on a sunken ship, which was filled with concrete, to mark the entrance. In its simplicity it resembles very much the Neronian harbour at Antium. Around the harbour there were no doubt a few warehouses and dwellings, but the small area of the whole, which is indicated by the position of tombs recently found beneath later *horrea*,[6] shews clearly that the alternative name, *Portus Ostiensis*, was no misnomer. What was built was not a rival port to Ostia; it was merely a harbour in which those ships which had previously been compelled to stand out at sea could moor in safety. It was distant about two miles from the centre of Ostia; but this was unavoidable, for no nearer site was at all suitable. Nor would this distance matter much, provided that the new harbour was connected by a canal with the Tiber, whence goods could be sent up-stream to Rome or down-stream to Ostia. *Naves codicariae* were already common upon the Tiber by the age of Seneca.[7]

But the difficulty created by the absence of return cargoes still remained, and in fact it was never solved satisfactorily. In the year 64, however, perhaps immediately upon the formal opening of the Claudian harbour,[8] one attempt does seem to have been made to solve the

[1] Tac. *Ann.* 15. 39. 2.
[2] The Large Horrea.
[3] Plut. *Caes.* 58; Suet. *Claud.* 20.
[4] Porphyr. ad Horat. *Ars Poet.* 65 (note in later hand).
[5] Suet. *Claud.* 20; Dio 60. 11, 12, 16; Plin. *H. N.* 9. 14, and 16. 202, etc.
[6] N. S. 1925, p. 54.
[7] Seneca, *de Brev. Vit.* 13. 4.
[8] It is generally agreed that the famous sesterce of Nero bearing a representation of the harbour cannot on stylistic grounds have been issued before the year 64 A.D. Yet it is difficult to see what else it can commemorate other than the completion of the harbour. The fact that the harbour was only completed under Nero probably explains why it was always known as *Portus Augusti*

problem. Our literary authorities[1] say that Nero attempted to build a canal from Lake Avernus to the mouths of the Tiber. If he really planned to connect Puteoli and Ostia by an inland canal, then undoubtedly Tacitus' strictures upon him are fully justified; only a madman would undertake such an enterprise. But it is perhaps more probable that our authorities are, as usual, biassed against Nero, and do not give a fair account of what he intended to do. He may, for example, have intended the canal merely to run in places where it would obviate the necessity of rounding dangerous headlands. This would have been a wise and not impracticable undertaking, and it is to be noted that the only point where the remains of Nero's canal could still be seen in Tacitus's day was 'through the hills nearest to Avernus,' whilst the other place to which he refers, and at which, therefore, the canal must have been planned, is 'through the Pontine marshes,' in other words, in the region behind the Circeian promontory. Whatever at any rate was his actual plan, there can be little doubt as to the motive which prompted Nero; he wished ocean-going vessels to be able to put in at Puteoli, where they could obtain return cargoes, without its being necessary to transport by road to Rome the goods which they brought. Had his design been successful, these goods could now have been transhipped into smaller vessels, which need no longer fear the more dangerous points along the coast, whilst the presence of adequate harbours *en route*, such as that which he built at Antium, would minimise the risk of loss by storm.

The attempt to construct a canal proved abortive; but there can be little doubt that the presence of its new harbour gave a strong impetus to the commercial life of Ostia. The change to the 'city' type of architecture will be discussed more fully in the next chapter; here it will be sufficient to say that the first example in Ostia[2] of a building of several storeys appears to date from the early Flavian age, whilst the latest example of a single-storeyed building[3] is to be assigned perhaps to the age of Trajan. Now if the harbour was only completed about the year 64, the Flavian period is the very time at which the increased prosperity which resulted would naturally lead to an increase in population, and, in consequence, to a demand for the 'city' type of architecture. Similarly, the enlargement of such buildings as the Large Horrea, despite the opinion of the excavators, appears really to date from the age of the Flavians.[4] It is also significant that when, probably during the Principate of Domitian, a secondary Porta Romana[5] was opened up through the city wall, no measures were taken for the defence of this additional gate, whilst when the street-level at the Porta Marina[6] was raised, perhaps about the same period or a little later, the existing gate was pulled down,

or *Portus Ostiensis*, never as *Portus Claudii*. It is significant that the work upon the canal commenced in 64. The two schemes may well have been complementary, and it may have been intended from the start to proceed with the second as soon as the first was completed. The harbour could, of course, be used before all the buildings around it had been completed. Tac. *Ann.* 15. 18.

[1] Tac. *Ann.* 15. 42; Plin. *H. N.* 14. 61.

[2] The newly excavated building at the corner of the continuation of the Street of the Mills to the south of the Decumanus and of the Street of the Southern Pomerium.

[3] The Bakery; cf. N. S. 1915, 242. An upper floor was added at a later date, perhaps during the latter part of the second century.

[4] Calza (N. S. 1921, 360) assigns this extension to the early second century on the strength of brick-stamps which he assigns to the late first century. But C. I. L. dates these to *saec. prim. fere med.*, and this, together with the fact that the bricks used are triangular, and are of an average width of 3·8 to 4·0 cm., seems conclusive. Triangular bricks passed out of use under Domitian, whilst the end of the century saw a diminution in their standard thickness.

[5] N. S. 1910. 134. This gate is there styled Porta Romana, the one now known by this name not having been excavated.

[6] Still unpublished.

and no other was erected to take its place. The city must have outgrown its walls to such an extent that they had once more become useless for purposes of defence.

This period too saw the growth of the colleges, even though they did not come to hold a position of real importance in the life of the colony until the next century. The date of the foundation of only one college is known to us, that of the *fabri tignuarii*, whose first *lustrum* can be proved by a comparison of two inscriptions [1] to have commenced in the year 58 A.D. Other colleges are not so kind to the historian, yet it is certain that several at least were already in existence during the latter half of the first century, whilst there is no evidence that any were in existence at an earlier period. Thus, even though the *stuppatores restiones* occupied a *statio* in the Square of the Guilds [2] prior to the raising of the floor-level under Domitian, the fact that the mosaic floor of the room they occupied was on a slightly higher level than the three other pre-Domitianic mosaics which have survived should probably be taken to indicate that they did not occupy this *statio* from the beginning, but commenced their tenancy at some unknown period after a previous tenant had moved away. A third college which appears to have existed during the Flavian period is that of the *tabularii*. In an inscription discovered in 1855 a *tabularius* who was a freedman of the Emperor Vitellius is said to have received '*honorem q. q. p. p.*' [3] Since, therefore, no freedman could ever hope to become *quinquennalis* of the colony, let alone *quinquennalis perpetuus*, A. Vitellius Aug. lib. Agathyrsus clearly held his office in a college of *tabularii*. Finally, it is certain that the *corpus traiectus Luculli* [4] was already flourishing during the Principate of Trajan, and it must therefore have come into existence not later than the latter part of the first century.

The Flavian age was also a period of increasing prosperity for the Augustales, which finally led to a reorganisation of their order, and to a change in the title of the individual members from *Augustalis* simply to *sevir Augustalis*.[5] This change in title is extremely useful to the historian, for it enables us to separate the earlier inscriptions of members of the order from the later. The date of the reorganisation, however, is far from certain, there being an unfortunate gap in the sequence of datable inscriptions between the year 63 A.D.,[6] when the members were still styled *Augustales*, and the Principate of Trajan,[7] by which time their title had changed. Three things, however, appear to suggest that the reorganisation took place nearer the end than the beginning of the gap. In the first place, the *tituli* of 18 *Augustales* have survived, compared with those of only 15 *seviri Augustales* of the period prior to the second reorganisation of the order, which, took place about the year 180.[8] Secondly, the sons of two *Augustales* named Cn. Sergius Anthus and C. Silius Felix [9] are both known to have held municipal office, a thing which seems to imply that by their time the plutocracy which ruled the city during the second century was replacing the previous aristocracy. Thirdly, there is reason to believe that the building which the excavators identified as the *Curia* [10] and dated to the second century served in

[1] 128 and 4569.

[2] *Vid.* Calza, p. 112.

[3] This inscription has never been published in C. I. L., but is referred to by Paschetto (p. 439).

[4] 5320; for date cf. *Prosop. Imp. Rom.* II. p. 190.

[5] *Vid.* C. I. L. XIV. supp., p. 611. *Augustales*, however, continued to be used in the plural.

[6] 299.

[7] 4486*a*; Wickert thinks that 4341 dates from the Principate of Nerva.

[8] This will be discussed in Part II of these studies.

[9] 411–12; 415.

[10] It is strange, if the building really served as a *Curia*, that no inscriptions relating to *decuriones* were found in it, but that fragments of fasti giving names of *Augustales* were found (XIV. 4560–3). The bricks used in the facing are mostly triangular

reality as the *schola* of the *Augustales* and dates from the age of Domitian. In that case it is tempting to connect the building of the new *schola* with the reorganisation of the order. This reorganisation was then probably the climax to the increasing prosperity which came to the members of the order as a result of the building of the new harbour.

Even in the first century the *Augustales* seem all to have been men of a certain wealth and position, though there are no instances of that rather profuse ostentation which so many later members of this order affected. Cn. Sergius Anthus and C. Silius Nerva, whose names have already been mentioned, are perhaps the wealthiest *Augustales* whose names have come down to us. More typical, however, of the *Augustales* of the period are M'. Acilius Modestus,[1] probably a freedman of one of the well-known Glabriones, who were connected with Ostia,[2] C. Tuccius Eutychus,[3] presumably a freedman of a member of the family of the C. Tuccius [4] who is known to have held municipal office in Ostia, L. Aquillius Modestus [5] and L. Rennius Philodoxus,[6] who were both *magistri quinquennales* of the college of *fabri tignuarii*. It was not until a plutocracy had ousted the aristocracy from the position that they held in the city that the real opportunity of the *Augustales* came.

The beneficial results of the building of the new harbour are then to be seen in most aspects of the life of the city. The Flavian age was one of ever-increasing prosperity for Ostia, and the memory of the prosperity which followed the construction of the harbour may well have been one of the motives which led Trajan to undertake its enlargement.

III. i.

Reference has already been made to the building activity in Ostia itself which followed the construction of the Claudian harbour. The enlargement of this harbour under Trajan gave yet a further stimulus to this activity, and under Hadrian and Antoninus it reached its height, even though it continued without break down to the age of Commodus. Indeed in the whole of Ostia it is almost impossible to find an area of any size which was not occupied with new buildings during this period, or, alternatively, in which the earlier buildings already in existence were not greatly altered or restored. Two characteristics mark the new buildings. They are constructed on a higher street-level; and they are usually of three, four, or even five storeys.

The reason for the change in the street-level is not difficult to discover. Mention has already been made of the low level of pre-Domitianic Ostia, and of its consequent liability to floods, which must have made the city unhealthy to live in. When once what had been little more than a village had developed into a city, such a condition of things must have become intolerable, and there can be little doubt that the general level of the streets and buildings was raised deliberately. Probably regulations governing the level of new buildings were incorporated in local bye-laws; at any rate there seems to be no exception to the rule that new buildings should be

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and average 3·6–3·7 cm. in width, but bonding-courses (first introduced in Ostia under Domitian) are found. The case for the identification of the building as a *Curia* rests on its supposed similarity to the *Curiae* of Pompeii and Timgad, and on the fact that no other building in the forum can possibly have served as a *Curia*. But both at Pompeii and Timgad the *Curia* was a separate building, whilst this one is part of an *insula* containing shops. It is, moreover, quite possible that the *Curia* at Ostia was not in the Forum.

[1] 287.

[2] Cf. 4324. Many M'. Acilii, in addition to the M. Acilii, are found in Ostia.

[3] 427. [4] 426. [5] 299. [6] 407.

constructed on a higher level. The natural order was generally observed, and the paving of the streets was raised only after the level of the buildings upon both sides of them had already been altered, the higher portions of streets being connected with the lower portion by means of ramps.[1] The difference in level was not really great at any time, but the general rule seems to be that the earlier the raising of the level, the smaller the amount by which it was raised. Thus at the Porta Marina, where the level was raised under Domitian or Trajan, the difference is less than a metre, whereas at the Porta Laurentina, where it was raised in the late Antonine age, there is a difference of 2·60 metres. It must be remembered, however, what a vast undertaking it would be to transport sufficient sand, river-dredgings, etc. to raise a large area by even the former amount.[2]

A further safeguard against flood perhaps took the form of an embankment along the side of the Tiber. At any rate the two highest points on the new level seem to have been by the riverside, the one to the west of the main excavations, where there was situated a warehouse of the Hadrianic period, containing *dolia*; the other to the north of the Square of the Guilds, where part of a mosaic on a much higher level than any of those of the Square is to be seen. Unfortunately excavation has not been carried down to the Sullan level at either of these places, so that for the present it must remain in a mere theory that any such embankment existed. It is always possible that there were from the first hillocks at these two points, or even that the embankment was constructed at an earlier date.

It is from the new type of 'city' house[3] that the reason for much of the new building activity can best be seen. The old houses, as has appeared above, were of the *atrium* type, and resemble very closely those typical of Pompeii. The new have little in common with these, being built of three, four, or five storeys, without atrium, but usually with a well of light, the rooms on the ground floor generally being used as shops, whilst those on the upper floors were grouped together to serve as flats. The new style of architecture obviously secured the maximum economy of space, for many families could now live together in a single building. Thus the House of Diana, which covers quite a small floor space, in addition to containing eight shops, must have served to house perhaps fifteen families. It is not surprising that Ostia did not increase in area after the close of the first century; it expanded not horizontally but vertically.

Even public buildings were sometimes pulled down and reconstructed. Under Claudius or Nero an adequate, indeed luxurious, thermal establishment had been erected to the east of the theatre; yet it was not spared. It was pulled down, and under Hadrian or Antoninus another took its place, which was apparently not very much larger, nor, so far as can be seen, very much better equipped. It is true that the site of the baths was changed a little, the new ones being constructed a few yards to the west of the old, in order to make room for the Street of the Vigiles. But this can hardly have been the reason for the reconstruction of the building, for the Street of the Vigiles was never one of great importance in Ostia, and indeed came originally to a blind end opposite the baths without leading through into the Decumanus. The reason for its reconstruction is to be found in the fact that the new building had a frontage of shops,

[1] As in the Street of the Round Temple.

[2] *Vid.* N. S. 1909, 82, for sea-sand used in the raising of the level of a building on the Street of the Sabazeum.

[3] Calza, p. 133; N. S. 1915, 27, 234, 1917, 312. For the new style of architecture in general *vid. Mon. Ant.* 1915, XXIII. 541; 1920, XXVI. 321; *Architettura ed Arti Decor.*, 1923.

whilst its upper floors were used as tenements, as can be seen from the fact that several staircases lead up to them direct from the street. Ostia was increasing so rapidly in population that land in a good position near the centre of the city was becoming too valuable to be used for one- or two-storey buildings accommodating few people or only a small amount of goods. Such early buildings as were not pulled down were for the most part altered in such a way as to increase their housing or storage capacity. Thus upper floors were added to the House of Apuleius and to the Large Horrea, both of which seem originally to have been single-storey buildings.

There is no evidence that any buildings, even public ones, were ever paid for directly from the municipal treasury. On the other hand, the imperial government appears to have been quite generous in its gifts to the city. Capitolinus,[1] in his life of Antoninus Pius, tells that this Emperor built the new Maritime Baths, whilst we know from epigraphic evidence [2] that the Baths on the Decumanus were paid for by Hadrian and, after his death, by Antoninus. Of Hadrian indeed the phrase is used that Ostia was 'conservata et aucta omni indulgentia et liberalitate.' [3] Another Emperor who is known to have been generous to Ostia is Septimius Severus, who restored, and to a great extent, rebuilt the theatre.[4]

With these and other similar exceptions, however, the rebuilding of Ostia must have been paid for from the pockets of its own citizens. The rents obtainable from the tenants of the new type of house must indeed often have proved a source of considerable profit to the speculative builder. Sometimes it is very easy to see that a row of shops was built speculatively, to be let either singly or in groups. Thus the shops on the Street of the Guilds were all originally connected by doors, which were later blocked, whilst at a still later period new doors were opened up between the shops; clearly these shops were first let to a large business which occupied them all, then they passed into the hands of a number of smaller proprietors, each of whom occupied one room, whilst finally they were taken over once more by another large concern.[5] Similarly the shops in a newly excavated *insula* on another street [6] were built with doors connecting each shop with that on either side; these, however, all seem to have been let in the first instance to small proprietors, and must never have passed into the hands of a large business; for the blocking of the doorways was here obviously done by the original builders.

Sometimes the ground-plan of an *insula* betrays that it is the work of private builders. That to the west of the Forum, for instance, which consists of the so-called *Curia*, the Building with Naves, and the House of the Lararium (reg. I, ins. ix),[7] is quite obviously the work of three architects, who worked with no regard to the requirements of each other. Admittedly the three buildings are of different dates, having been constructed in the order named; yet in view of the general similarity of the brickwork used, not many years can separate the second from the first, or the third from the second. But it is only necessary to look at a plan of the *insula*, with its double walls and re-entrant angles, to see that each architect designed his own building to fit in with what already occupied the remainder of the *insula*, heedless of the fact that much of

[1] Capitolinus, *Ant. Pius*, c. 8.
[2] 98. [3] 95. [4] 114.
[5] It is strange that they seem to have preferred to open up new doors rather than remove the blocking of the original ones.
[6] Viz. those on the western side of the continuation of the Street of the Mills to the south of the Decumanus.
[7] Plans of this *insula* are given in N. S. 1923, p. 177, and in Calza, p. 149.

what stood on the site would be demolished in the course of a few years. Other *insulae* [1] show the same characteristics. There is seldom any sign of a single mind unifying the whole.

For the construction of public and semi-public buildings, from which no profits were likely to accrue to the builders, the city in all probability had to rely entirely upon benefactions. The two P. Lucilii Gamalae,[2] for example, both name a long list of public buildings which have been constructed at their expense. But it will be seen below that the Gamalae were citizens of exceptional position in Ostia, and it is significant that no other citizens of the colony claim to have made any benefactions of this kind. A more popular method [3] of 'benefaction' may have been to join a college such as that which existed for the purpose of enlarging a temple, and which continued to exist, probably for the purpose of banquets, etc., long after work upon the temple must have been completed. Yet even with such added inducement to generosity, it must be admitted that public buildings tended to be neglected. It can hardly have been a feeling of reverence for the works of the past that caused so many old temples, for example, to be left alone at a time when almost all the other buildings in the city were being reconstructed. Of the temples which still survived at the close of the Roman period five [4] had been constructed during the late republic, two [5] during the Principate of Claudius, one [6] in the last decades of the first century, one [7] in the first half of the second century, and one probably in the Severan period.[8] The typical citizen of Ostia was not inclined to part with his money unnecessarily, and if, on entering office or on some similar occasion, he found it necessary to simulate generosity, he tended to choose for his expenditure some object which would find him favour with the multitude.

III. ii.

During the Principate of Trajan further improvements were carried out at Porto, and there can be little doubt that these were not only paid for but directly organised by the imperial government. The success of the Claudian harbour had, as has been seen, been sufficient to justify, even to necessitate, further enterprise. A seaport of the importance to which Ostia had now attained required a harbour where ships could rest in security in even the very worst weather. This security the Claudian harbour, consisting as it did of two moles projecting into the sea, could not offer; in the year 62, for example, no less than 200 ships were wrecked while lying moored within the harbour.[9] Probably, too, the Claudian harbour was proving inadequate to house the increased amount of shipping which it had attracted; Nero's plan for connecting Puteoli with Ostia by a canal having ended in failure, the cargoes of those ships which put in at Puteoli had still to be transported to Rome by land.

The improvement carried out by Trajan consisted of the addition of an inner basin

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[1] *E.g.* reg. I, ins. ii. Plans are given in N. S. 1916, p. 428, and in Calza, p. 125.

[2] 375 and 376.

[3] 246; 5356.

[4] Viz. the temple at the corner of the Street of the Mills and the Decumanus (which may well be the Temple of Vulcan) and those of the Square of the Four Temples.

[5] Viz. the Temples of Magna Mater and of Rome and Augustus.

[6] Viz. the so-called Temple of Ceres in the Square of the Guilds. Calza dates this temple to the age of Commodus, but the type of brick used in the facing of the concrete (triangular, of an average width of 3·7 cm., with bonding-courses) appears to preclude any date other than that given in the text.

[7] Viz. the Capitol. This temple seems to have taken the place of an earlier one which stood partially on the site of the later building which Calza identifies as the *Curia*.

[8] Viz. the so-called Pantheon: *vid.* p. 69, note 2.

[9] Tac. *Ann.* 15. 18; Ammian. Marcell. 19. 10. 4.

of hexagonal shape, slightly smaller in extent than the original harbour, but itself adequate to house a vast amount of shipping. This inner basin could be entered either by a narrow channel from the outer harbour or by a canal from the Fiumicino branch of the Tiber. The work involved must have been enormous, for the whole of the new basin had to be cut out of the land, yet it seems to have been completed in quite a short space of time. There is no reference to it in Pliny's Panegyric (A.D. 100), yet the evidence of coins appears to shew that the work was well advanced by the sixth consulship of Trajan.

A large part of the remains now visible around the inner basin and commonly assigned to Trajan do not in reality date from him at all, but from a much later period.[1] But, though the only definitely Trajanic buildings, the purpose of which can be determined with certainty, are a block of *horrea* to the north and the so-called Imperial Palace, which may well have been the residence of some high official, yet even so the buildings encircling this basin at the beginning must have been by no means inconsiderable. For the position and number of the second-century tombs shew that quite a large population must have lived around the harbour. Where they lived is something of a mystery; for excavation has failed to reveal a single house other than the Imperial Palace. It appears most probable that above many of the public buildings there were tenements, as above the Baths on the Decumanus at Ostia. All the new buildings at Porto, as at Ostia, were constructed upon the higher ground level.

The effect of the construction of the inner basin upon the economic life of Ostia is less clearly visible than the corresponding effect of the original harbour. This is, however, probably due to the fact that the work of Trajan merely served to increase an already existing prosperity, whereas the construction of the Claudian harbour converted the city into a seaport of the first importance.

III. iii.

If the development of Ostia in the latter part of the first century brought prosperity to the many, it appears also to have brought disaster to the few. Some of the old aristocratic families no doubt became extinct; some may have sold their estates and removed elsewhere; others may have continued to farm their estates, losing interest, however, in municipal affairs when these passed into the hands of the rich *parvenu*. At any rate only three of the earlier aristocratic families are known to have survived into the second century, and of these the M. Acilii [2] probably live no longer in Ostia but in Rome, though some connection with the colony, perhaps an estate in the neighbourhood, may be indicated by the adoption of Egrilius Plarianus by an Acilius Priscus.[3] The A. Egrilii, too, have risen above municipal office, and the P. Lucilii, alone of *decuriones* of the second century, appear to be descendants of members of the earlier aristocracy. They thus came to hold a unique position in the life of the city, to which every word of their two famous inscriptions [4] testifies. They hold offices that are otherwise unheard of; when others are elected to office *decreto decurionum* they are elected *in comitiis*; they become *decuriones gratis* and *infans* respectively; and, last but not least, the cost of their public funerals is not remitted, a pleasing indication that others were willing to spend money to do them honour. They are, in fact, the last survival of the aristocracy of the preceding century.

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[1] These buildings will be discussed in the second portion of these 'Studies'.

[2] 72, 156, etc.

[3] 72, 156, 281, 4442; cf. 155, 4444.

[4] 375–6, etc.

Even they, however, are finding times difficult, perhaps as a result of their great expenditure upon benefactions. For just as Egrilius Plarianus is adopted into the family of the M. Acilii, so they find it necessary to adopt into their family the son of Cn. Sentius Felix [1] a rich *curator navium marinarum*, whose tribe, Teretina, and whose immediate ascent to office after entering the *ordo* indicate that he was a new-comer to Ostia, and whose patronage of innumerable colleges—perhaps the easiest method of buying popularity—is in direct contrast to the policy of the Lucilii, who were patrons of none. Indeed his cognomen, coupled with his blatant attempt to imitate the family-tree of the Lucilii, may well indicate the servile birth of his grandfather.

Nor is Sentius really unrepresentative of the Ostian *decuriones* of the period. Like him they are mostly immensely wealthy. No less than eight of the 24 who are datable with certainty to this century are of the equestrian order; whilst if we include all *decuriones* other than those who can be shewn to date outside this century, the proportion rises to 20 out of a total of 53. It is, of course, possible that inscriptions referring to the rich are more likely to have survived than those commemorating their poorer brethren; but this will probably be more than counterbalanced by the fact that of the 16 and 33 respectively, many have no opportunity to tell us that they were *equites*.

Like Sentius, too, the Ostian upper classes seem to have been on the whole unwilling to spend money in that lavish manner which is so characteristic of the Antonine age, upon public objects out of which they themselves would reap little benefit. Reference has already been made to the general unwillingness, except on the part of the P. Lucilii, to contribute towards the cost of public buildings; the only other benefactions which we can feel to have been prompted by public spirit is that of C. Fabius Agrippa,[2] or a member of his family, who endowed *alimenta* for the feeding of poor children. But Fabius himself was by no means a typical Ostian citizen, being a member of a family of soldiers, who could trace his free descent back for at least three generations. The usual objects of expenditure all involved self-glorification. C. Domitius Fabius Hermogenes [3] provided at his own expense *scenici ludi*; when he died, his father, a *faber tignuarius*, endowed an annual dole in memory of him. M. Licinius Privatus [4] paid 50,000 sesterces to be *biselliarius in primis constitutus*. The cost of a public funeral was often remitted; for example, that of their sons by P. Celerius Amandus [5] and Q. Plotius Niger,[6] that of his father by C. Silius Nerva,[7] and that of a relative by L. Kacius Reburrus.[8] How many of these public funerals would have been granted had it not been known in advance that no expense would be incurred?

The most characteristic type of patronage, however, is that of colleges, often in a form hardly distinguishable from direct bribery. One of the patrons of the college of the measurers of corn was closely connected with the college of bakers,[9] another was a corn merchant.[10] No doubt the patronage of a college was apt to be expensive. It was evidently a great and unusual, though perhaps no less costly, honour to be *adlectus gratis*, as was Cn. Sentius Felix *inter navicularios maris Hadriatici*; indeed one is reminded of C. Granius Maturus,[11] who evidently paid for his decurionate before instead of after adlection, and so received it *gratuitum ob munificentiam eius*. No fewer than ten second-century magistrates claimed connection with the

[1] 377; 409. [2] 350. [3] 4642. [4] 374.
[5] 321. [6] 400. [7] 415. [8] 413.
[9] 4452; q.q.c.p. is probably here to be interpreted 'q(uin)q(uennalis) c(orporis) p(istorum).'
[10] 4620.
[11] 362–4.

colleges in some way which would involve expenditure, four both as patrons and *quinquennales*, five as patrons only, and one as *quinquennalis* only; in other cases a connection may be inferred. Usually a patron was patron of more than one college.

Not even the stigma of servile parentage could prevail against wealth. M. Cornelius Valerianus,[1] whose son died at the age of twelve already a *decurio*, was the son of a freedman, yet was himself a *decurio* and *eques Romanus*. In similar fashion Cn. Sergius Priscus [2] and C. Silius Nerva [3] confessed to servile parentage, yet their careers do not seem to have been affected, the former becoming aedile, the latter actually *duumvir*; whilst M. Licinius Privatus,[4] a freedman, yet called himself *pater et avus decurionum*, *pater equitum Romanorum*. Sometimes, too, the gentile name betrays the origin of a man; M. Annius Proculus [5] was probably a descendant, not very far distant, of a freedman of Antoninus Pius. But most startling is the difference between the *cognomina* of the first and second centuries. It is only necessary to compare with the list given in a previous chapter [6] the following, all *cognomina* of *decuriones* or magistrates; Augustalis, Euphemianus, Pompilianus, Grattianus, Caninianus, Parthenopeus, Favor, Vitalis, Felix Socrates, Probianus, Hilarianus (married to Clodia Helpis, whose parents were Caltilia Tyche and Attius Hermes), Herodes, Architectianus (son of Thallus, grandson of Architectus), Hermogenes, Faustus, Amandus, Charitonianus, Felix, Rufus Chrysidianus, Firmius Felix, Euprepes, Vitalianus, Fortis, Eupator, Fortunatianus, Felicianus. Nor was it uncommon to marry freedwomen; C. Silius Nerva,[7] the son of a freedman, married Silia C. l. Tryphaena; the wife of Sex. Carminius Parthenopeus [8] was Carminia Briseis, in both cases evidently freedwomen of their respective households; and the mother of M. Annius Proculus [9] was Annia Iucunda. In fact the only Ostian magistrates, or decuriones of whose free descent we may feel reasonably certain were the landowners, P. Lucilii Gamalae, and the soldiers C. Fabius Agrippa [10] and C. Nasennius Marcellus.[11] But no freedman could ever himself enter the *ordo*; he could merely obtain the *decurionatus ornamenta*, as did P. Aelius Aug. lib. Liberalis,[12] presumably an imperial official, and M. Licinius Privatus,[13] a rich *faber tignuarius*.

The fact is that Ostia had now become a city inhabited almost solely by people whose livelihood depended upon the city's trade. In place of a country-town it had now become a port, and nothing but a port, and despite Minucius Felix' [14] description of it as *amoenissima civitas*, which perhaps refers to a short stretch along the shore, which seems at all times to have been occupied by villas, the town itself must have lost most of its amenities. It is difficult in the extreme to find a possible, let alone a probable, example of a man retiring to Ostia after a lifetime spent elsewhere; that is, of a new-comer to the city who was attracted by something other than its trade. On the other hand, there are many examples of men who retired elsewhere to spend the wealth they had amassed in Ostia. L. Antonius Epitynchanus,[15] for instance, who was *qq. collegi fabrum tignuariorum Ostis* and *sevir Aug. in provincia Narbonensi colonia Aquis Sextiis*, clearly retired there after a lifetime spent in Ostia; that he was *sevir Augustalis* implies that he was rich; whilst the occupation of *faber tignuarius* was one of the easiest ways of earning money in Ostia. Similarly, Cn. Statilius Crescens Crescentianus [16] and L. Lepidius Eutychus [17]

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[1] 8, 250, 251, 341. [2] 412. [3] 415. [4] 374.
[5] 292. [6] *Vid. sup.*, p. 45. [7] 415. [8] 314.
[9] 292. [10] 349. [11] 171, etc. [12] 2045. [13] 374.
[14] Min. Felix, *Oct.* 2 and 4.
[15] 296. [16] 421. [17] 372.

both retired to Tusculum, C. Caerellius Iazemis [1] to Tibur, and Varronius Nicias [2] to Velitrae.

III. iv.

In this century for the first time it becomes possible to trace in some detail the working of the constitution, and to follow the municipal *cursus honorum*.

A young man destined for high office in the colony would begin with a choice of alternatives. Either he might begin by holding the office of *flamen* of some deified emperor, such as Vespasian, Titus or Hadrian, whose cults were especially prominent in Ostia, or he might be appointed *aedilis* or *praetor sacris Volkani faciundis*. In either case the duties involved would in all probability consist merely of participation in certain ceremonies. On his choice of alternative depended to some extent the future career of the aspirant to office. The post of *flamen Romae et Augusti* was one of high repute in the colony, and of the four occupants [3] of that office whose previous careers we are able to trace in detail all had previously been *flamines* of some deified emperor. Similarly, both [4] of the *pontifices Volkani et aedium sacrarum* whose previous careers are known to us had commenced the *cursus* with the post of *aedilis sacris Volkani faciundis*. Occasionally, though rarely, a man might hold both of the alternative offices,[5] but it must have been but seldom that anyone could proceed to a higher magistracy without having held either of them. Only in two *tituli* are these offices omitted when they might have been given, as against twenty in which they are mentioned; in one [6] of the two, moreover, the phrase *aed. quaest. duumvir* is used, which need not be taken to imply that no other office was held. Only in the case of Cn. Sentius Felix [7] is it probable that no early office was ever held, and he, as has been seen, in all probability came to the city only comparatively late in life; so, it would appear, an exception was made in his case, and in the same year in which he was adlected *decurio* with the rank of *aedilicius* he was appointed *quaestor*, and was also designated *duumvir* for the following year.

For what period these early offices were held there is no evidence. Both aediles [8] and praetors of Vulcan, however, were numbered *primus*, *secundus*, or *tertius*, which would seem to imply that six magistrates of Vulcan held office together. If this was so, they can hardly have been appointed annually, for with very few exceptions they all proceeded to higher office and there would certainly not be so many vacancies in the higher magistracies each year. Either, then, they were appointed for several years, or, alternatively, they remained in office until such time as they had been elected to some higher post. It is at any rate certain that the appointments to these preliminary offices were usually made at an extremely early age. One aedile of Vulcan [9] died at the age of nineteen, one praetor [10] at the age of twelve, and another praetor [11] when only four years seven months old.

The next stage, after one of these preliminary

[1] 4234.
[2] ix. 6585.
[3] Viz. M. Iunius Faustus (4142), Q. Plotius Romanus (400), L. Licinius Herodes (373, post-Severan), and the son of T. Rubrius Eupator (4664).
[4] P. Lucilius Gamala senior (375), and P. Lucilius Gamala junior (376).
[5] *E.g.* P. Nonius Livius Anterotianus (390–1), and L. Licinius Herodes (375).
[6] Viz. in that of C. Nasennius Marcellus senior (171), and he, like Sentius, may have come to the city only late in life, for he passed through the equestrian military cursus. I have excluded from consideration such inscriptions as that of C. Silius Nerva senior (*decurio, duumvir*), for there is no reason to believe that he did not hold other offices.
[7] 409.
[8] For the aediles cf. 4553, indicating that they too were numbered like the praetors. The man in question was only *aedilis secundus*; but there is no reason to doubt that three aediles held office together.
[9] 351. [10] 341. [11] 306.

offices had been held, was adlection either to an aedileship or into the *ordo*. Which alternative was adopted would perhaps depend upon the age of the man concerned; the elder P. Lucilius Gamala,[1] for example, first became aedile, whilst the younger [2] never held that magistracy at all, having been adlected *decurio infans*. In any case, of course, the aedile was almost certain to be adlected to the *ordo* after his term of office had expired.

Having entered the *ordo* the chief objects of ambition were the offices of *duumvir*, especially in the quinquennial years, when the census was taken, of *flamen Romae et Augusti*, and of *pontifex Volkani et aedium sacrarum*. In order to obtain these it was, however, usually necessary to hold some intermediate post, such as aedile (if not already held), *quaestor alimentorum* or *quaestor aerari*, the duties of which cannot have been onerous if we may judge from the fact that in one case when an aedile died in office no successor was appointed 'in order to console his father.' [3] The responsibilities of the quaestors may have been greater, it is true, but not until the financial crisis of M. Aurelius' reign, which will be discussed in Part II of these Studies, would it seem that the duties even of the *quaestor aerari* weighed very heavily upon him. These offices, in fact, may well have been merely an excuse for the exaction of a *summa honoraria*. When C. Domitius Fabius Hermogenes [4] boasted that he was the first *flamen divi Hadriani* to provide at his own expense *scenici ludi*, he was probably merely extending to one of the preliminary offices the type of gift that would normally be associated with a higher post.

Mention has already been made of the fact that at an earlier period the duumvirate was the final goal of a man's ambition, and that it was often held many times by the same man. By the second century, however, its prestige was already failing, and it was unusual for anyone to seek to hold the office more than once.[5] Certain of the duties which had previously been attached to it seem in the course of time to have been transferred to other officials. Thus, for example, permission to move a *compitum* was in the first century given by the *duoviri* alone,[6] whereas in the second the site for a dedication to Serapis was allotted by the *duoviri* and the *pontifex Volkani et aedium sacrarum* in conjunction; [7] in the third, as will be seen below, the duumvirate came to be degraded still further, and another similar site was allotted by the pontifex alone, the names even of *duoviri quinquennales* being given in the inscription only for the purpose of dating it.[8] It is certain that a *summa honoraria* was demanded even from the *duoviri*, it being a rare—and probably costly—honour to be adlected *gratis*, as was C. Granius Maturus *ob munificentiam eius*.[9]

The fact that the duumvirate was now held only once by each individual must necessarily have meant that almost everyone who commenced the *cursus* could hope one day to attain to that office. It is, therefore, hardly surprising that the real objects of ambition came to be the posts of *pontifex Volkani et aedium sacrarum* and *flamen Romae et Augusti*, the heads of the old cult of the Olympian deities and of the new cult of the deified emperors respectively. The former of these two posts—and therefore probably also the latter—was held either for life or until the occupant resigned of his own

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[1] 375. [2] 376. [3] 4642. [4] 4642.

[5] In fact, after the end of the first century, the only men known to hold the office more than once are C. Nasennius Marcellus senior, who held it three times, and C. Valerius Iustus, who held it twice. These men, however, date only from the very beginning of the century, being colleagues in the duumvirate in the year 111 A.D. Cf. a new fragment of *fasti* published by Calza in *Boll. Stud. Med.* III. iv (Oct. 1932), and, for Nasennius, XIV. 171.

[6] 4710. [7] 47. [8] 324; cf. 132. [9] 362–4.

accord. A fragment of the *fasti*[1] for the year 36 A.D. records the death in that year of a *pontifex* of Vulcan, who had been appointed in the year 30 A.D., whilst we know that M. Antius Crescens Calpurnianus,[2] who was already *pontifex* in 194 A.D., had not relinquished that post by the year 203. The age at which appointment to it was made appears to have varied. In the years preceding the appointment of Antius there seem to have been several *pontifices* in quite a short space of time. On the other hand, the elder Gamala[3] was made *pontifex* before he became *duumvir*, whilst L. Licinius Herodes[4] and P. Aufidius Fortis[5] junior both appear to have held the office of *flamen Romae et Augusti* before the duumvirate.

A final honour which might sometimes be obtained by the wealthy citizen of Ostia was that of patron of the colony. In the first century, and also in the third and later, this office seems usually to have been reserved for prominent men living outside the colony. Roman senators, imperial officials, and the like. But in the second, when money was plentiful, and the wealth of Ostia must have rivalled that of almost any other city of the empire, such men as M. Acilius Egrilius Plarianus,[6] the C. Nasennii Marcelli,[7] and the P. Aufidii Fortes[8] were appointed. As against these, the only 'outsider' whom we know to have been patron during this century was the *praefectus annonae* L. Volusius Maecianus,[9] whose duties would naturally bring him into close contact with the city.

III. v.

In the course of the second century a great development took place in the size and importance of the colleges. Several of these, as has been seen above, were already in existence during the second half of the first century. But now for the first time, if we may judge from the number of inscriptions that have survived—a not unfair test, provided that it be borne in mind that later inscriptions always have a slightly greater chance of survival—they rise to a position of real importance in the life of the city. The following are the dates of the inscriptions of the *fabri tignuarii*[10]; A.D. 63, 147, 158, 163, 163, 163 or a few years later, 166, 173, 178, 178, 188, 198, 198, 198, 218, 233, 233, 233, and 285; in addition one[11] seems to date from the age of Hadrian, one[12] from the middle of the second century, two[13] from the reign of M. Aurelius, and three[14] from that of Septimius Severus; six inscriptions cannot be dated. In other colleges a smaller number of inscriptions is datable, but the proportion is similar. Down to the year 145 A.D. the total number of datable inscriptions of all colleges is four[15]; from the year 145 until the end of the century, on the other hand, no less than 28 can be dated, exclusive of the *alba* of several colleges. There must have been an extremely rapid rise in the membership of the colleges.

In one college at least this rise in membership can definitely be proved. We possess two complete *alba* of the college of the *lenuncularii tabularii auxiliarii*, one for the year 152,[16] the

[1] 4535; cf. 4533. [2] 324 and 325. [3] 375.
[4] 373. [5] 4622. [6] 72.
[7] 171, 460, etc. [8] 4621, 4622, etc.
[9] 5347.
[10] 299; 347; 158; 370; 4654; 2630; 105; VI. 321; 297; 5345; 5; 128; 374; 4569; 160; 418; 419; 4668; 128 (second dedication).
[11] 4349.
[12] 4656. The fact that he was not a *quinquennalis* probably indicates that he dates from the period before a second reorganisation of that order about the year 180, which will be descussed in the second portion of these 'Studies'; cf. also 490 and 491.
[13] 4620; 4642.
[14] 314 (from tomb on south of the Street of the Tombs); 4382; 5344.
[15] 299 (A.D. 63); that quoted by Paschetto, p. 439 (Flavian); 4549, 58 (pre-Domitianic); 5320 (dated approximately by *Prosop. Imp. Rom.*, II. p. 190, Imp. 202).
[16] 250.

other for the year 192.[1] In the course of these forty years the membership increased from 125 to 258. Had the difference between the two figures been smaller, it might have been suggested that the increase was due to a further rise in the population of the city; its very magnitude, however, is sufficient to disprove any such theory. The explanation must be that at an earlier period only a small proportion of the working classes of the city had been members of colleges, whereas now they were coming to join them in ever-increasing numbers.

There appear to have been two main reasons for this increase in the size and popularity of the colleges. In the first place they tended to give something for nothing. It has already been pointed out how frequently the local aristocracy patronised them; they came, however, to have the support of others outside the city. The *album* of the *lenuncularii* for the year 192 names in addition to the equestrian patrons, most of whom are men who have made their fortunes as *lenuncularii*, three patrons of the senatorial order, one of whom held the consulship during that very year. Similarly, in 152 the style of lettering used divides the patrons of the college into two groups, and though in this case their rank is not expressly stated, one at least of the four who form the first group was certainly a senator; all four, moreover, were patrons of at least two other colleges. Even of the five patrons of that year whose names are given less prominence, one[2] was *praefectus annonae* and another an imperial freedman. In neither year do any of the first group of patrons appear to have resided in Ostia. The family names of no less than five of the six (one name was later erased) never recur in the colony, and it is inconceivable that all trace of themselves, their families, and their freedmen should have been lost had they lived there. It seems certain that many of the prominent men not only of Ostia but of Rome contributed generously to the funds of the colleges of Ostia.

All money thus contributed, whether from Ostia or from Rome, would, of course, pass ultimately either directly or indirectly into the hands of the poorer members. It is perhaps possible from the evidence to date the development of the practice of making direct gifts to the members of colleges. The earliest patrons whom we meet are M. Marius Primitivus,[3] whose son later became *quinquennalis* of the *corpus traiectus Rusticeli*, and who in the year 145 was presumably himself their patron, and C. Veturius Testius Amandus,[4] *quinquennalis* of the *codicarii* and patron of the 'five colleges of *lenuncularii*' in 147. Neither patron appears at this time to have given a dole to the members of the college; in the inscription of Veturius great stress is laid upon his having 'defended' the *lenuncularii*, whilst Marius on this occasion contented himself with the gift of a statue of the co-emperors on the occasion of the birthday of Antoninus. Twenty-one years later, however, this same M. Marius Primitivus[5] made another similar gift to the same college, this time upon the birthday of L. Verus, but accompanied it with a dole of one *denarius* apiece to each of the members of the college. This is the first example on record of a dole to members of a college of workmen, even though they had been given at an earlier date to the *Augustales*[6] and also to a college incorporating those who had subscribed towards the enlargement of a temple.[7] Other instances of doles to colleges of workmen follow quickly; the members of the *corpus traiectus Rusticeli*, for example, are

[1] 251. [2] Viz. L. Volusius Maecianus.
[3] 4553; cf. 5327–8.
[4] 4144. [5] 4454. [6] 8.
[7] 246. The earliest record at Ostia of a dole of any kind dates from the year 129 (XIV. 4734), but it is not known who were the recipients of it.

known to have received further doles in 172 and 176.[1]

The other reason for the development of the colleges in the second century lay in the fact that the imperial government now looked upon them with favour, and used them for its own purposes. The regular magistrates of the *fabri tignuarii* were *magistri quinquennales*, who were elected every five years. But twice we hear of *praefecti*, and these can hardly have been mere substitute magistrates, for the occupation of one of the two, P. Aufidius Fortis,[2] is known, and he was not a *faber tignuarius* but a *mercator frumentarius*. Both *praefecti*, too, seem to have been new-comers to the city, for Aufidius certainly came from the province of Africa, whilst both he and the other *praefectus*, M. Antonius Severus,[3] were members of non-Ostian tribes, *Quirina* and *Menenia* respectively. Can these officials be other than imperial nominees, appointed to supervise and perhaps to reorganise the college?[4] This supervision, if it existed, must have been exercised through the officials of the *annona*, who would appoint men whom they could trust to act for them. Even so, they themselves always kept in close touch with the colleges, and no less than eight second-,[5] and four third-century[6] inscriptions, recording honours conferred upon *procuratores annonae* by the colleges, still survive, while in the year 166 in a dedication to L. Verus[7] the name of a *praefectus annonae*, now illegible, was actually placed before the names of the magistrates of the college. In one inscription[8] of the early third century (218 A.D.) it is explicitly stated that in return for a dedication to the *procurator annonae* by the *fabri tignuarii* his *cornicularius* presented a dole to all the members of that college; and such a gift in return would probably be expected during at any rate the latter part of the second century. All, whether imperial officials themselves, nominees of imperial officials, or Roman senators, who could be relied on for doles or for contributions towards the funds of the college would be in a position to exercise a considerable amount of control upon its activities. As time went on, supervision increased, and by the middle of the third century we find even an imperial official who not only was patron of the *corpus pistorum*, but also had been for twenty-eight years their *quinquennalis*.[9]

The importance and prosperity of the colleges during the second century can well be seen not only from epigraphic but also from monumental evidence. The so-called House of the Triclinia[10] is, apart from *horrea* and baths, perhaps the largest building yet excavated in Ostia, and occupies one of the most valuable sites near the centre of the city. Yet it has rightly been identified as the *schola* of the college of *fabri tignuarii*. The evidence for this is to be found in the inscriptions[11] of this college—one consisting of a complete *album* of its members—which have been found there, coupled with the peculiar plan of the building.

The house is built round a large *cortile* at one end of which is the *tablinum*. Around the other three sides of the *cortile* runs a portico out of which doors to the east and west lead into medium-sized rooms, several of which still contain *triclinia*. The building is thus admirably suited to the needs of a college. Meetings could take place in the *cortile*, the portico of which would to a certain extent shelter the members during inclement weather. The *tablinum* would no doubt be used for religious ceremonies, whilst dinners—a most important feature in the life of any college—could be

[1] 4555; 4556. [2] 4620. [3] 298.
[4] Certain of the other colleges too had *tribuni*, whose function may have been similar.
[5] 161; 172; 4451; 4459; 4467; 5345; 5351; 5352.
[6] 154; 160; 170; 5344.
[7] 106. [8] 160.
[9] 4452. Cf. p. 58, note 9.
[10] Calza, p. 168. [11] 4300; 4569.

taken in the privacy of the side-rooms with *triclinia*, each of which is large enough to accommodate perhaps twenty members in comfort. Other rooms upstairs, which could be reached by a staircase in the south-west corner of the building, were available when necessary.[1]

This *schola* is situated on one side of the Square in front of the Baths by the Forum, which may have served as a *palaestra* for the bathers. On the other side of the Square, is another building,[2] much altered in plan in later times, which originally seems to have resembled the House of the Triclinia in many ways. If this really is to be identified as a second *schola*, then it is important, for, though it was constructed perhaps under Trajan, yet towards the end of the second century it was converted into an industrial establishment. It is not improbable that the college which occupied it increased in size to such an extent that it was compelled to move into larger premises.

III. vi.

Mention has already been made of the great wealth amassed by many of the citizens of Ostia during this century, a wealth often sufficient to entitle its possessor to membership of the equestrian order. Nor was it in the civil service, or in other occupations unconnected with the trade and commerce of the city that these fortunes were made. In 192,[3] when the *lenuncularii* actually divided their patrons into senators and *equites*, no patron apparently being of lower rank than equestrian, all six equestrian patrons appear to have made their fortunes as *lenuncularii*, even though at least one was the son of a freedman; at any rate the names of freedmen of each of the six appear among the *plebs*, together with the name of the son of one of them. Similarly, though in 152[4] the lower grade of patron was not explicitly named equestrian, three of the five have freedmen among the plebs, the remaining two being the *praefectus annonae* and an imperial freedman. So too with the *fabri tignuarii*; of the sixteen of their magistrates who are known to us, excluding those of whom nothing but the mere name survives, there is no doubt that nine[5] at least were freedmen, and of the remaining seven, who did not explicitly admit libertine descent, one[6] was either the son or the grandson of a freedman, and almost all had libertine *cognomina*; yet of the nine, eight[7] had earned sufficient wealth to enable them to become *Augustales*, one[8] sufficient to be awarded the *decurionatus ornamenta*, one[9] sufficient to enable him to retire to

[1] This *schola* dates from the early second century, as is shown by brick-stamps. It is built of concrete, faced with broken roof-tiles, mostly yellow, of an average width of 3·7 cm., laid with remarkable precision, the joints being very narrow indeed. In general, the quality of the workmanship is far superior to the average, even of this period, and is well worthy of a building destined for the use of the college of builders.

[2] The bricks of the original period are of an unmistakable shade of red, so that those of the original walls which still remain may be picked out with ease. The original house was built round a *cortile*, as was the House of the Triclinia, and there was a portico in a similar position. Doors on the south and east still lead into a number of small rooms on these sides, whilst the presence of similar rooms on the western side is proved by the remains of the top of a flight of stairs visible with difficulty at the south-western corner of the building. It is true that the rooms on the eastern side all served as shops after the alterations made at the end of the second century. But it is significant that almost the whole of the outer wall on this side dates from the period of the alterations; it is probable that a continuous wall was pulled down, and replaced by one with the appropriate openings for shops. A wide opening from the *tablinum* on the northern side of the *cortile* led into an octagonal room, containing niches in the walls, which may have served as an Augusteum.

[3] 251.

[4] 250.

[5] Viz. L. Antonius Epityncbanus (296); L. Aquillius Modestus (299); Ti. Claudius Urbanus (330); M. Licinius Privatus (374, etc.); L. Rennius Philodoxus (407); C. Similius Philoccurius (418–9, etc.); L. Antonius Peculiaris (297); T. Flavius Hilario (2630); A. Livius Anteros (4656).

[6] P. Cornelius Thallus (5).

[7] All except T. Flavius Hilario.

[8] M. Licinius Privatus, *pater et avus decurionum*.

[9] L. Antonius Epityncbanus.

Aquae Sextiae in Gaul, and one [1] sufficient for his son to become patron of a college. Ostia, in fact, must during this period have offered unrivalled opportunities to the ambitious.

Not everyone, of course, who became *faber tignuarius* or a *lenuncularius* could expect to make a fortune. The profits of a business would here as elsewhere tend to go to the employers rather than to the employees. For the line drawn between the two seems to have been quite as distinct as it is in modern times, even though both employer and employee could become members of the same college. Thus of the 34 M. Publicii, 16 L. Furii, 7 Sex. Sextilii, 7. M. Antistii, 5 M'. Lollii, 4 C. Vatronii, 4 Sex. Cloelii, 3 P. Fufieii, 3 C. Firmanii, 3 L. Critonii, 3 P. Sittii, and 3 Q. Flavii who were citizens of Ostia, all are *lenuncularii tabularii auxiliarii*, and no one else with any of these praenomina and nomina ever reappears in the colony. In each case one or perhaps two were employers, the remainder freedmen employees. It is quite clear that they did not merely represent members of a family following the same occupation and working on an equal footing with each other. Thus there were 5 M'. Lollii, 4 C. Vatronii, 3 C. Cornelii, and 3 P. Fuficii engaged at work as *lenuncularii* in 152,[2] but no one with any of these names in 192; on the other hand, there were 7 Sex. Sextilii, 5 D. Otalicii, 5 M. Curtii, 4 Sex. Cloelii, 3 P. Sittii and 3 Q. Flavii at work in 192,[3] but no one with any of these names in 152. These figures are hardly explicable save on the theory that some were employers, some employees, and that during this interval of forty years many of the employers died, or changed their occupation, or left the town. Their freedmen employees would in consequence have to find other work, and new employers would take their places, with freedmen of their own. Often it is quite easy to see who was the employer, who the employee. There were three generations of the M. Cornelii,[4] Epagathus, himself a freedman, his sons, Secundus and Valerianus, and his grandson Valerianus Epagathianus, all except the last *quinquennales* of the *lenuncularii*, and presumably the greater number, if not all, of the other 30 M. Cornelii named in the *alba* were their freedmen.

It would seem that many slaves were manumitted, not as a reward for past services, but in order to enable them to hold more responsible posts in the service of their late masters. Such a man as L. Calpurnius Chius,[5] who was still alive during the lifetime of a grandson of a freedman of his own, can hardly have rendered during the short time that he was in servitude sufficient service to his master to merit manumission. Nor is Calpurnius in any way exceptional. T. Antistius Agathangelus [6] survived his grandson, who was a *decurio* of the city; yet the fact that he held no municipal office, as did his sons and grandson, coupled with his cognomen, probably indicates that he was of servile birth. Similarly, T. Flavius Hilario [7] was still alive thirty-five years after he had become *decurio* of the college of *fabri tignuarii*, whilst a certain Antonius,[8] who acquired sufficient wealth to enable him to become *sevir Augustalis item quinquennalis*, died at the age of thirty-six. Further possible examples of men manumitted at an early age are L. Licinius Privatus,[9] who is described as *pater et avus decurionum, pater equitum Romanorum*, and C. Silius Felix,[10] whose tombstone records that his grandson had been *duumvir* of the colony. It is always possible that the four first mentioned were freed through the efforts

[1] A. Livius Anteros. His son was patron either of the *fabri tignuarii* or of the *fabri navales*.
[2] 250.
[3] 251.
[4] 8; 250; 251.
[5] 309.
[6] 294.
[7] 2630.
[8] 295.
[9] 374, etc.
[10] 415. It is possible, however, that the tombstones of Licinius and Silius were not erected immediately after their deaths.

of disinterested friends or relatives. But, in view of the figures of the *alba* given above, it appears probable that a not uncommon motive for manumission was a desire on the part of a master to promote a slave to a post which he was capable of filling, but for which no mere slave would suffice. A freedman could be bound to his patron almost as closely as a slave to his master, and would, in certain situations, be much more useful. A slave so freed might, like nine of the *lenuncularii*, remain in a humble position for forty years or more; or, if he was lucky and if his patron died, he might, like Trimalchio, quickly climb into a position of eminence.

III. vii.

The prosperity of Ostia was now such as to attract immigrants to the city from all parts of the empire. The provinces of North Africa are naturally well represented, and several of the leading men of the city seem to have come originally from these parts. P. Aufidius Fortis,[1] for example, a *mercator frumentarius*, who rose to be patron of the colony, had already been a *decurio* at Hippo Regius before he removed to Ostia, whilst Flavius Apollonius [2] and a certain Aphrodisius [3] came originally from Alexandria, P. Caesellius Felix [4] from Sullectum, and Valerius Veturius,[5] who died at the age of nineteen, from some town in the province of Africa. It is even probable that such distinguished men as P. Martius Philippus,[6] tribune of the college of *fabri navales Portenses*, and C. Granius Maturus,[7] the *duumvir*, who seems to have had some connection with the Catinenses, were natives of an African province, for all three are of the African tribe *Quirina*.[8]

Since, however, Ostia was always so closely connected with the *annona*, a correspondingly close connection with the provinces which exported corn is hardly surprising, and its existence can be proved from such inscriptions as that of L. Caelius Aprilis,[9] a member of the non-Ostian tribe *Arnensis*, who is described as a *curator navium Carthaginensium*, and from dedications, one to the Emperor Antoninus by the *domini navium Karthaginensium ex Africa*,[10] and another to an influential citizen of Ostia by the *domini navium Afrarum universarum*.[11] Yet it would be easy to over-emphasise the connection of the city with the African provinces as compared with the other parts of the empire. The inscriptions of the Square of the Guilds, for example, show that twelve African and Sardinian towns had representatives at Ostia to protect the interests of their citizens, whereas only one town, Narbo, from the whole of the remainder of the empire was so represented. It would, however, be a grotesque misrepresentation of the facts to suggest that the trade passing through Ostia was similarly apportioned. In the first place it is possible, even probable, that other similar porticoes remain yet to be excavated, in which it will be found that the representatives of other towns of the empire had their *stationes*. It is quite understandable that the representatives of towns in neighbouring districts might tend to congregate together. Secondly, it is quite certain that changes in the tenancy of the rooms beneath the portico did take place, and also that all but two of the inscriptions which give the names of towns were laid at some period posterior to the raising of the level of the portico. It is unfortunate that none of these eleven inscriptions can be dated, but it is not improbable, in view of the inferior quality of the workmanship, that some or all were laid in the third century or later. In that case it would be natural to

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[1] 303; 4620; 1, etc. [2] 478. [3] 479.
[4] 477. [5] 481. [6] 169. [7] 362–4.
[8] For the connection of Ostia with the North African provinces cf. also 4694, 5340, 4378, and VIII. 2825 and 3283 (two soldiers of legion *III Augusta* recruited from Ostia).
[9] 4626. [10] 99. [11] 4142.

expect that the names of towns connected with the *annona* should predominate; the trade of Ostia as a whole suffered a great decline after the close of the second century, yet Rome always demanded corn, and its imports of corn can hardly have decreased in proportion to those of other commodities.

There can, at any rate, be little doubt that during the second century immigrants came to Ostia from almost every part of the empire, some perhaps to trade with the towns that they had left, others attracted by the prosperity of the port of Rome and by the great opportunities which it offered to the ambitious. In the former category is to be placed L. Numisius Agathemerus,[1] for example, a rich *sevir Augustalis*, who is described as a *negotiator ex Hispania citeriore*, whilst the *lenuncularius*[2] whose name is illegible but who came from Laodicea clearly belongs to the latter class. Usually, however, it is not possible to determine a man's motive in coming to Ostia; we merely know the name of the town where he was born without knowing why he left it. Thus M. Caesius Maximus,[3] whose *titulus* ends with the typical Spanish formula '*h(ic) s(itus) e(st) s(it) t(ibi) t(erra) l(evis)*,' is known to have been born at Aeminium in Lusitania, L. Maec . . . Ter . . f. Maelo[4] at Gratianopolis in Narbonese Gaul, P. Claudius Abascantus[5] somewhere in the *Tres Galliae*, Ti. Claudius Suriacus[6] at Castrum Novum, C. Iulius Telesphorus[7] at Ravenna, C. Valerius Amandus[8] at Vercellae, Socrates Astomachi (fil.)[9] at Tralles, Asclepiades Simonis f.[10] at Cnidus, whilst the cognomen of M. Aemilius Malacitanus[11] may betray the place of origin of another Spaniard, and Athenodorus Macedonis f. Doritanus[12] must surely have been a Greek. From these examples it might seem that the eastern provinces of the empire were not represented at Ostia so fully as the western. Yet the citizens of Gaza resident in Porto even in the third century were sufficiently numerous or wealthy to be able jointly to erect a statue in honour of Gordian,[13] whilst we know that many Oriental cults were celebrated there.[14] Ostia, in fact, must have been a meeting-place of all the nations, and its inhabitants so cosmopolitan that we can easily understand the motive of Proclus,[15] who, when he signed a mosaic which stood before the barracks of the *vigiles*, thought it necessary to add to the usual 'Proclus fecit,' 'Προκλὸς ἐποίησε.'[16]

[1] 397. [2] 453.
[3] 4822. The same formula is found in 914.
[4] XII. 2211. [5] 326. [6] 4656. [7] 1170.
[8] 230. [9] 480. [10] 475. [11] 4778.
[12] 476. [13] *I.G.* xiv. 926, etc.
[14] Cf. *I.G.R.* 914–7; 924–6, etc.
[15] 4755. The first two of the four letters 'M. C. S(ua) I(mpensa)' which followed 'Proclus fecit' have never been satisfactorily explained.
[16] The frequency with which members of non-Ostian tribes are found at Ostia forms an interesting commentary on the cosmopolitan character of its population. In C. I. L. in addition to the tribes *Palatina* and *Voturia* we find many others represented.

ROMAN VERONA: THE ARCHAEOLOGY OF ITS TOWN-PLAN

By I. A. RICHMOND and W. G. HOLFORD

Archaeology sheds little light upon the origins of Verona, but ancient literary tradition assigns [1] its foundation to the Rhaetians and Euganeans of northern Italy, while modern philologists [2] do not hesitate to identify the name Verona as Gallic. Actually, there is no doubt that, as Pliny asserts, the town lay in Rhaetian land, for inscriptions [3] mentioning Rhaetian deities and religious functionaries come from its neighbourhood. One may even guess at the site of the Rhaetian *oppidum*, for there is only one hill at Verona that it can have crowned, namely, the high spur east of the river, on which the Visconti later placed their castle of San Pietro. This overlooks the best point to span the turbulent Adige (*Athesis*) near Verona, and its position serves as a reminder that the Rhaetians were northern folk looking southwards and choosing to live in a hill-town, like their Gallic kinsmen. The disposition of Trento provides an almost exact parallel, further up the valley.

After the Hannibalic invasion, before which Rome had already planted colonies beyond the Apennines, Roman traders in plenty must have found their way to Verona; for the town not only lay at the foot of the great trans-Alpine trade-route of the Brenner Pass, but also bestrode the highway that skirted the marshes on its way to Aquileia, to tap the Danube trade-route. A Latin colony [4] was planted there under Pompeius Strabo, in 69 B.C. But of this town, which reared the poet Catullus,[5] nothing remains, unless it be the great bridge across the Adige, which, as will be seen, appears to antecede the other visible remains. Indeed, the shadowy character of this early foundation has led some investigators [6] to suppose that it lay across the river, at the foot of Castel San Pietro: there is, however, no trace of Roman urban development north of the river, and it is not difficult to believe that the earliest town was lost to sight under an Augustan standardisation, like so many early foundations in Cisalpine Gaul.

The type of the later standardised town, now fully Roman, leaves little doubt about its date. A considerable portion of its street-plan still survives in the modern lay-out (fig. 1), which covers an alluvial plain, in accordance with Augustan policy. There are some notable buildings, and the mouldings [7] used upon three

[1] Pliny, *N.H.* iii, 130, *Raetorum et Euganeorum Verona :* Livy, v, 35, 1, *manus Cenomanorum . . . ubi nunc Brixia ac Verona urbes sunt, locos tenuere :* Justinus, xx, 5, 8 (*Galli*) *sedibus Tuscos expulerunt et . . . Veronam . . . condiderunt.*

[2] Nissen, *Italische Landeskunde*, ii, 204, *n.* 5. His complete account, *op. cit.*, 204–208, is one to which every writer on Verona is naturally indebted.

[3] *CIL.* v, 3898 (*Cuslanus*), 3904 (*Iuppiter Felvennis*), 3900 (*Ihamnagalla* and *Sqnnagalla*), 3931–2 (*flamen Mannisnavius*), 3927 (*pontif. sacr. Raet.*).

[4] Panegyr. ix, 8, *quam coloniam Cn. Pompeius aliquando deduxerat.*

[5] Catullus, lxvii, 34, *Brixia Veronae mater amata meae.*

[6] Frothingham, *A.J.A.* xviii (1914), 143: *Roman Cities in N. Italy and Dalmatia*, 250, with a contradictory statement on p. 254. Compare Roman *Tridentum*, further up the valley, which is laid out on the flats opposite the older hill-fortress.

[7] The theatre mouldings are still on the spot: those of the Gate are to be seen in the staircase of the chandler's shop that now occupies the archway (cf. Carotto, in Saraina, *De origine et amplitudine civitatis Veronae*, Verona, 1540, plates between pp. 31 and 32): those of the Amphitheatre still exist (cf. Maffei, *Verona illustrata*, iv, 2, cols. 90–206, tavv. iii–xvi, mouldings tav. vii).

of them, namely, the Theatre, the South Gate, now masked by the late-Roman Porta dei Leoni, and the Amphitheatre, are early-Augustan in character. The close resemblance of the masonry skeleton of the Amphitheatre to that of the south range of shops in the Forum of Caesar and those of the early Augustan amphitheatres at Arles and Mérida is also worth note.[1] The town-plan is equally remarkable. The modern street-system, where superimposed upon the Roman, reveals the clearest remains of a rectangular lay-out, whose main axes are represented by the Corsi Porta Borsari and Felice Cavallotti, as the *decumanus*, and Vie Cappello and S. Egidio as the *cardo*. The rectangle (fig. 2) was designed to contain eight blocks from north to south, and nine from east to west; and these, as at Turin [2] (Augusta Taurinorum), were laid out in squares 260 Roman feet broad, indicating plots of two *iugera* (240 feet square) bounded by twenty-foot streets, except the main streets, which were wider. But the general likeness to Turin, which could be paralleled elsewhere, does not end with the dimensions of *insulae*. The rectangular scheme, logically completed, contains exactly the same number of blocks. Was it ever thus completed at Verona? The Veronese rectangle has suffered by changes in the course of the Adige; but the most important erosion, on the east, has taken place since the tenth century, when the Carta Rateriana [3] shews the river running in the *Interrato dell' Acqua Morta*, and the other can easily have happened in the water-meadows north of the town. Thus, there is no reason to think that the rectangle was not originally completed as projected, and at all events the correspondence of the projected plan to that of Turin is certain. Nor is this likeness likely to be accidental. The strategic position of the two *coloniae* is exactly the same, and both in the Augustan age came to do the same work of guarding the foot of two important Alpine passes. Turin was founded about 28 B.C.: the rebuilding of Verona is best connected with the preparation for the opening of the Brenner and the conquest of Rhaetia in 15 B.C. Thus, the one plan may well have inspired the other, and their resemblance is further evidence for the standardisation of Augustan policy.

Two monuments outside the town also bear upon its planning. The Amphitheatre is set out with its axes exactly parallel with those of the street-system. This would indicate that it was linked up with the regular network of town-drains that always accompanied such planning, and often,[4] as at Trier, Turin and Mérida, covered a wider area than came to be inhabited. At Verona, evidence from the Corte Nogara [5] suggests that the town-wall, which in its first form belongs to the Augustan age, sliced off a considerable corner at this angle, as if the projected rectangle had not here been completely filled. This also happened [6] at an angle of Turin, Fano and Orange, among contemporary foundations; but it rarely happens at more than one angle. Here it would serve to emphasise the fact that the Amphitheatre, as in all early towns,[7] lay on the outskirts of the inhabited area. The second monument of moment was the Circus. This, unlike the Amphitheatre, has now dis-

[1] Forum of Caesar, personal observation: Arles, Constans, *Arles antique*, pl. v, p. 256; Mérida, *Arch. Journ.* lxxxvii, pl. viii.

[2] Haverfield, *Ancient Town-planning*, 88, fig. 15; Bendinelli, *Torino romana*, folding plan.

[3] Carta Rateriana, see reproduction on p. 139 of G. Biàdego's *Verona*, volume 45 of the series *Italia Artistica* (Bergamo, 1914).

[4] Trier, Haverfield, *op. cit.*, 126: Torino, Haverfield and Bendinelli, *locc. cit.*: Mérida, *Arch. Journ.*, lxxxvii, 99, fig. 1.

[5] See note 23 below.

[6] Bendinelli, *loc. cit.*: Fano, personal observation.

[7] Haverfield, *op. cit.*, 78.

FIG. 1. MODERN VERONA: STREET-PLAN OF THE AREA COVERED BY THE ROMAN TOWN.

appeared, but the evidence about it was collected by Pompei,[1] and enables its site to be fixed, though its exact dimensions are to seek. The curved end was discovered at S. Anastasia, evidently to the north of the *decumanus*, and part of the straight seating near S. Felicità. But, given the curved end, the minimum dimensions of a *circus* dictate that it must have stretched along the river-bank as far as the great bend, thus severing direct communication between the town and the second bridge up-stream, now called the Ponte Pietra. This raises the question why this bridge is so badly connected with the Augustan town-plan, in marked contrast with the main bridge at the end of the *decumanus*, once visible opposite S. Anastasia. Two facts suggest an explanation. The style of the bridge, as demonstrated by the surviving north abutment, two main arches and a flood-arch between them, is early and crude;[2] but its position is the best point to span the river. It ought, then, to be the earliest bridge at Verona, and, if so, it may be thought that it went with the pre-Augustan *colonia*, and was side-tracked because it would not fit with the new rectangular lay-out. Later than the Augustan town it cannot be, and the treacherous Adige does not invite superfluous bridges.

Four other buildings fit the Augustan town-plan, without facilitating its reconstruction. The *capitolium* did not crown the Colle San Pietro, as sometimes thought, but occupied[3] an *insula* south of the *decumanus*, and resembles similar temples at Spoleto and Brescia. The Theatre, on the other hand, is placed across the river, not because the town had any large quarter there, but because Colle San Pietro provides a convenient slope for its seats, eliminating expensive substructures and arcading. There were two four-way arches, one which spanned the *decumanus* near S. Eufemia, reconstructed by Carotto,[4] the other the well-known Arch of the Gavii[5] (rebuilt in 1932 next to the Castello), situated on the same road, well outside the town like the Arch at Aosta. Frothingham thought[6] that this marked the edge of a *pomerium*, or large tract of empty public ground, forming a *glacis* in front of the town-wall, but the idea is difficult to accept.

The Augustan town-wall is not visible now, but the inference that it bounded the rectangular street-system is confirmed at three points. Part of the South Gate exists[7] behind the Arco dei Leoni, namely, the east arch of a double rear entrance to a courtyard gate, of the common Augustan type. Its entablature,[8] exhibiting bold mouldings and clumsy *bucrania*, is matched by a frieze in the Theatre, of

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[1] Pompei, *Studi intorno all' anfiteatro di Verona* (Verona, 1877), 14–16. The existence of the building is attested by an inscription. Canobio found straight seating near S. Felicità, while Moscardo found the curved end at S. Anastasia. Comparative and approximate lengths are Arles, 100 × 350 metres, Toledo, 100 × 422 m., Mérida, 116 × 420 m. The space now available at Verona is 115 × 325 m., but it may once have been longer and a little wider, allowing for river-encroachment.

[2] Note its smooth finish and the absence of mouldings, combined with large and irregular stonework. The flood-arch is very high and the original bridge ran up to a high central point, in order to breast the floods for which the town was famous; cf. Panegyr. ix, 8, *Athesis ille saxis asper et gurgitibus verticosus et impetu ferox.*

[3] *A.J.A.* xviii (1914), 129–145.

[4] Saraina, *op. cit.*, pl. i, shews that the Arch lay in the Corso (*curricularis via*) near S. Euphemia, not at Piazza Erbe, as Frothingham thought. F.'s idea, that fragments from S. Tommaso (cf. Saraina, pls. iii and iiii, p. 36) belonged to a gate, lacks proof. His 'Arco di Valerio' is the early gate at the Arco dei Leoni, inscribed by the IIIIviri, P. Valerius, Q. Caecilius, Q. Servilius and P. Cornelius (*op. cit.*, 31–2, pl.). The Forum is mentioned in *Veronae rythmica descr.*, *Rer. Ital. Script.* (ed. Carducci-Fiorini), c. 10–11, of A.D. 768–810, *Foro lato spatioso sternato lapidibus, Ubi in quattuor cantus magni instant fornices.*

[5] Arch of the Gavii, Rossini, *Gli archi trionfali*, pl. xix; Curtis, *Memoirs of the American Academy in Rome*, ii, p. 44.

[6] Frothingham, *Roman Cities in N. Italy and Dalmatia*, p. 251 *seq.*

[7] *JRS*, xxiii, 167.

[8] See note 7.

FIG. 2. ROMAN VERONA: CONJECTURAL RESTORATION OF TOWN-PLAN, BASED UPON ACTUAL REMAINS AND THE *CARTA RATERIANA*.

Augustan date. There is no doubt that the Wall pierced by this Gate ran parallel to it, towards river and Amphitheatre; but in Corte Nogara,[1] near the latter, it was found running obliquely, slicing off one angle of the projected rectangle. Lastly, the west wall is known north of Porta Borsari, six feet behind the wall of Gallienus. At this Gate also, an earlier gateway[2] is attested by the lack of doors and portcullis in the present arches, while the back of the Gate has neither seating for vaults nor holes for floor-joists: thus the present structure is a mere façade, once built up against an earlier structure, like the Arco dei Leoni. The rear archway of this Gate was found in 1880, eighteen metres behind the front façade.

The line of the north and east wall is uncertain: but the rectangular street-system would indicate a northern line along Via Barchette and Via di S. Giusto, and an eastern line along Via di S. Felicità. It might be guessed that S. Anastasia in its first form had occupied the East Gate, as the church of S. Simeon appropriated the Porta Nigra at Trier. For the bridge which this Gate served had gone when the tenth-century Carta Rateriana was made, thus depriving the Gate of its *raison d'être*.

The Augustan wall was re-conditioned by Gallienus[3] in A.D. 265: but the Gates are witness of an intermediate reconstruction for decorative purposes. At Porta dei Borsari[4] the decorated *fasciae* of an architrave have been removed to accommodate the inscription of Gallienus, and the stones of this lowest story are cut and tooled in a different style from the masonry of the upper floors,[5] associated with Gallienus by the brickwork used in them (see below). Again, at the Arco dei Leoni, the awkward relation of the second story to a ground-floor pediment, now removed, seems to indicate that the two upper floors, in the style of Porta dei Borsari, are a later addition. The decoration of these lower arches is not early Augustan; but their date is difficult to decide. It may be suggested that they started as honorary arches, not necessarily as high as the Gate they masked, and were converted by Gallienus into Gate-façades. Exact parallels are rare, but the practice appears as early as Augustus on the Arch of the Sergii at Pola,[6] and again at Orange,[7] where honorary Arches are attached to defensive Gates, while at Fano[8] the Arch takes the form of a façade, but still had a Gate behind it.

The Wall of Gallienus followed the Augustan defences except at the south-west angle, where it projected to include the Amphitheatre like a great bastion. But even where it followed the older course, it was built as a completely new Wall, a little in advance of the older structure, as at Strasbourg.[9] East of the Adige it is no

[1] The precise course has been disputed. Pompei (*Atti della Deputazione Veneta di Storia patria, Saggio di studi intorno alle varie mura della città di Verona*, 8), copied by Pagano, thought the wall cut across the angle through Corte Nogara; and this has been denied by Simeoni (*Verona*, p. xxxiv). But the course of the later wall, from the Amphitheatre to Arco dei Leoni, is logical, only if it aimed at an earlier wall running obliquely; for, had the earlier angle been a right angle, the lay-out of the later wall would have introduced an unnecessary re-entrant.

[2] This point is elaborated in *JRS*, xxiii, 166: it is the striking feature of the rear side of the arch. The rear arches of this gate, provided with recesses for doors, built of bricks and quoined in stone, were published by Pagano (*Giornale d'Artiglieria e Genio*, Parte 2*a* (1880–81), tav. 2*a*, fig. 1*a*. The bricks measured 0·44 m. × 0·29 × 0·07. The missing element in the scheme, namely, the frontal portcullis, can only have been supplied in the arch which has been postulated behind the present masking façade of Gallienus.

[3] *CIL.* v, 3329; *Colonia Augusta Verona nova Gallieniana, Valeriano II et Lucilio Coss., muri Veronensium fabricati ex die III non. Apriliu . . . dedicati pr. non. Dec., iubente Sanctissimo Gallieno Aug. N., insistente Aur. Marcellino VP. Duc. Duc., curante Iul. Marcellino. . . .*

[4] The *fasciae* are visible on the lateral faces of the stone, unoccupied by the inscription: they are unintelligible unless once carried round. Cf. Frothingham, *op. cit.*, p. 255.

[5] Cf. Frothingham, *loc. cit.*

[6] *JRS*, xxiii, 149–151: Rossini, *op. cit.*, p. 2, pls. vii, viii.

[7] *JRS*, xxiii, 153–154.

[8] Fano, Rossini, *op. cit.*, p. 2, pl. ix–xi; *JRS*, xxiii, 157.

[9] Forrer, *Strasbourg–Argentorate*, pls. xvii–xviii.

longer visible, but its line is not in doubt, thanks to the researches of Pompei.[1] It ran up to Colle San Pietro and formed a bridge-head castle, like the regular fortresses[2] at Cologne and Mainz and the irregular *enceinte*[3] at Kaiser-Augst, and it was composed of re-used blocks, exactly like the main town-wall. Its restricted course shews that by A.D. 265 there was no large town to enclose on this side of the Adige, if, indeed, a Roman town had ever existed there at all.

The town-wall is visible in the street leading to the Ponte della Vittoria, in an alley behind Via Antonio Cantore, and in Piazza Mura Gallieno. At the first two points only the base appears, 1·80–1·85 m. thick, built as two faces of large blocks robbed from buildings and cemeteries, with a rubble filling between them. No stone from the Amphitheatre[4] can be distinguished, even in the third example immediately next to that building; and Pompei's excavations shewed that the Wall ran round the Amphitheatre without embodying it, leaving it intact and in full use.[5] Near the Amphitheatre the Wall (fig. 3) is preserved to its full height of

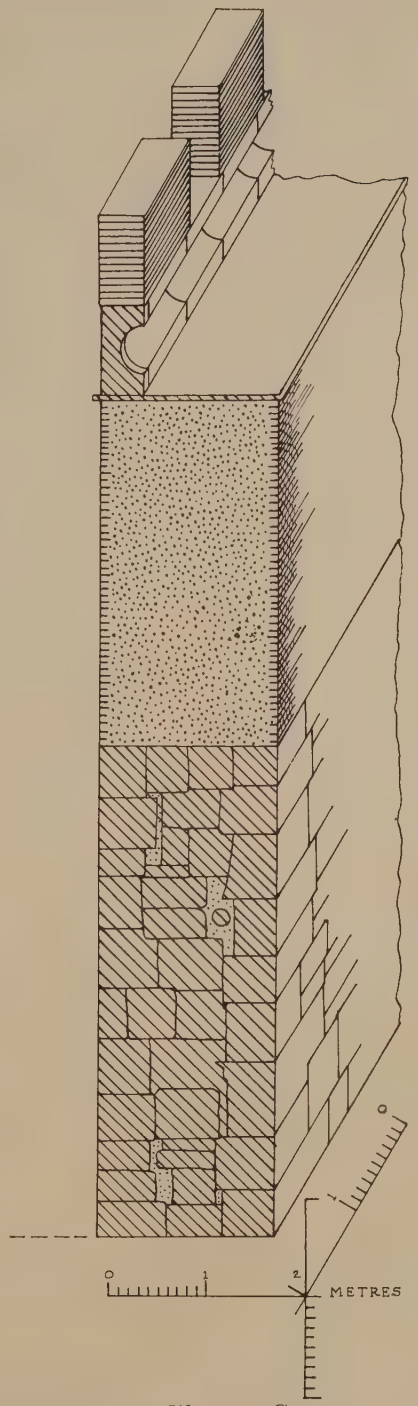


FIG. 3. VERONA: THE WALL OF GALLIENUS IN PIAZZA MURA GALLIENO.

[1] Pompei, *op. cit.*, 4–5, folding-plan; the wall left the river just north of Ponte Pietra, where Pompei saw it in house n. 8 (*op. cit.*, p. 4). It returned on the south just beyond the church of SS. Faustino e Giovitta, where was a Gate known as the Porta dell' Organo (*op. cit.*, p. 6), mentioned in A.D. 813. It is not to be confused with the Gate of the same name in the *Muro Nuovo*, usually assigned to the twelfth century (Pompei, *op. cit.*, p. 16, cf. Pagano, *op. cit.*, p. 18, mistakes its date). The wall may have enclosed all Colle S. Pietro, like its successor, or have run up to a watch-tower on the summit; cf. Fick, *Arch. Anzeiger*, 1930 (*Jahrbuch* 45), 266–276, fig. 6 (Gerona).

[2] Koepp, *Römer in Deutschland*, Karte xxii, 128 (Köln), Karte iv, 22 (Mainz).

[3] Stähelin, *Die Schweiz in römischer Zeit* (edn. 1), p. 511, fig. 162.

[4] It has been conjectured that the amphitheatre's external arcade disappeared thus, but the fact is not demonstrable.

[5] This is unusual. More often, the external arcade was embodied to save time and material; cf. Blanchet, *Enceintes romaines de la Gaule*, 90, fig. 21 (Trier); *ibid.*, 40, fig. 8 (Tours); Lanciani, *Forma Urbis Romae*, xxxii and xxxviii (Rome); Dyggve-Brønsted, *Recherches à Salone*, i, 16–17, plan B, by Dyggve (Solin).

8·50 m. from street to rampart-walk, to which must be added 1·50 m., the difference in level between street and Amphitheatre-floor, and 1·80 m., the height of the merlons. The total height is thus 11·80 metres. The base of robbed blocks, 1·80 m. thick, runs up to the height of 6·50 m., where it is neatly finished off by a string-course of long blocks. It is then crowned, for 3·50 metres, by a well-built concrete wall faced in small tufa blocks and carrying a rampart-walk paved with robbed slabs, at least one being the bed-mould of a cornice. Above this come the parapet and merlons, the former composed of large robbed stone gutter-channels set on edge, with the flat edge towards the outside of the Wall. They are 0·90 metre high and an exactly similar gutter-stone is preserved in the Theatre, perhaps indicating whence they were taken. The merlons rise 0·90 metre above the parapet; they are 1·80 metres long, and some are built in bricks, measuring 0·07 × 0·29 × 0·44. The interval between them is approximately 1·20 metres. It should be noted that the bricks used in the merlons are fresh bricks exactly like those used in the upper floors of the Porta dei Borsari, a connection which enables us to give not only the base of the Wall but the whole structure to Gallienus. Such walls of mixed construction are not uncommon in the third century, as witness[1] those of Poitiers, Bordeaux, Soissons and Le Mans. But it should be noted that whereas the Gallic examples are usually taken to be the consequence of invasion, this Wall was built in anticipation of the raid which came three years later.

[1] Blanchet, *op. cit.*, pls. i (Poitiers), ii, 1 (Bordeaux), ii, 2 (Soissons), iii, 2 (Le Mans).

THE SO-CALLED "MAGAZZINI REPUBBLICANI" NEAR THE PORTA ROMANA AT OSTIA[1]

By FREDERICK H. WILSON

The building with which this study is concerned occupies the eastern half of Region ii, 2, just inside the city gate at Ostia. Two specific statements [2] have been made concerning it, that it commenced as *magazzini* or *horrea* in the republican era, and that it was converted into baths in the late third century A.D.; these were the suggestions of the excavators, and have never yet been questioned. They are points of considerable importance, because this building would thus be the only example of republican *horrea* yet discovered in Ostia, and the conversion of *horrea* into baths or shops, which the theory implies, would be important for the economic history of Ostia, whether the reason for the change was the concentration of *horrea* elsewhere or merely the decline of the city. The second statement, too, would point to building activity in Ostia at a time when no other big building was being put up.[3] This paper is an attempt to prove that at no time was the building used as *horrea*, and that the conversion to baths is to be placed not in the third, but in the late first, or very early second century A.D. Five main periods will be distinguished, of which the appended table gives a summary.

Period.	Date.	Description.
I.	End of republic.	Business premises in centre, surrounded on all sides by shops.
II.	Early first century A.D.	Rebuilding of certain walls, without radical alteration of plan.
III.	Late first or very early second century A.D.	Changes necessitated by conversion of central part of building to baths.
IV.	Late second or very early third century A.D.	Rebuilding of certain walls, and addition of upper storey to eastern part of building.
V.	Middle third century.	Extension of baths.

Period I. Building Material.—There is little difficulty in recognising those parts of the building which are original. At points of special stress piers of large blocks of Anio tufa took the weight; elsewhere the material used was concrete, faced with good quality quasi-reticulate, and quoined with small blocks of tufa.

Date.—The quasi-reticulate is of a quality much superior to that of the Sullan city wall, or to that of the Square of the Four Temples; in places it almost verges upon the reticulate of the Augustan Theatre. Judged by its materials, then, this building would seem to date from the last years of the republic. Its level is that of the period from Sulla to Domitian.

Nature of the Building (see Plan II).[4]—An approximate reconstruction of the original

[1] For the plans illustrating this article thanks are due to Mr. L. W. Thornton White, Henry Jarvis Student at the British School at Rome, 1929–30.

[2] See Calza, *Ostia*, pp. 90–92; also Carcopino, *Journ. d. Sav.*, 1911, 446; and N.S. 1910, 66, 231, 433; 1920, 156.

[3] I hope to discuss elsewhere the date of the so-called Pantheon at Ostia, which a recent writer (*Memoirs of the American Academy in Rome*, Vol. VIII, 1930, p. 161) has claimed to be later than Constantine.

[4] I have adopted the following system in referring to walls, etc. On the plans a number is assigned to each room. Letters in the text preceding a number show the relation of wall to room; letters following a number indicate the part of the wall referred to. Thus wall N24 is the wall which bounds room 24 on the north; N46W is the western end of the wall to the north of room 46; but NW46 signifies the wall to the north-west of room 46.

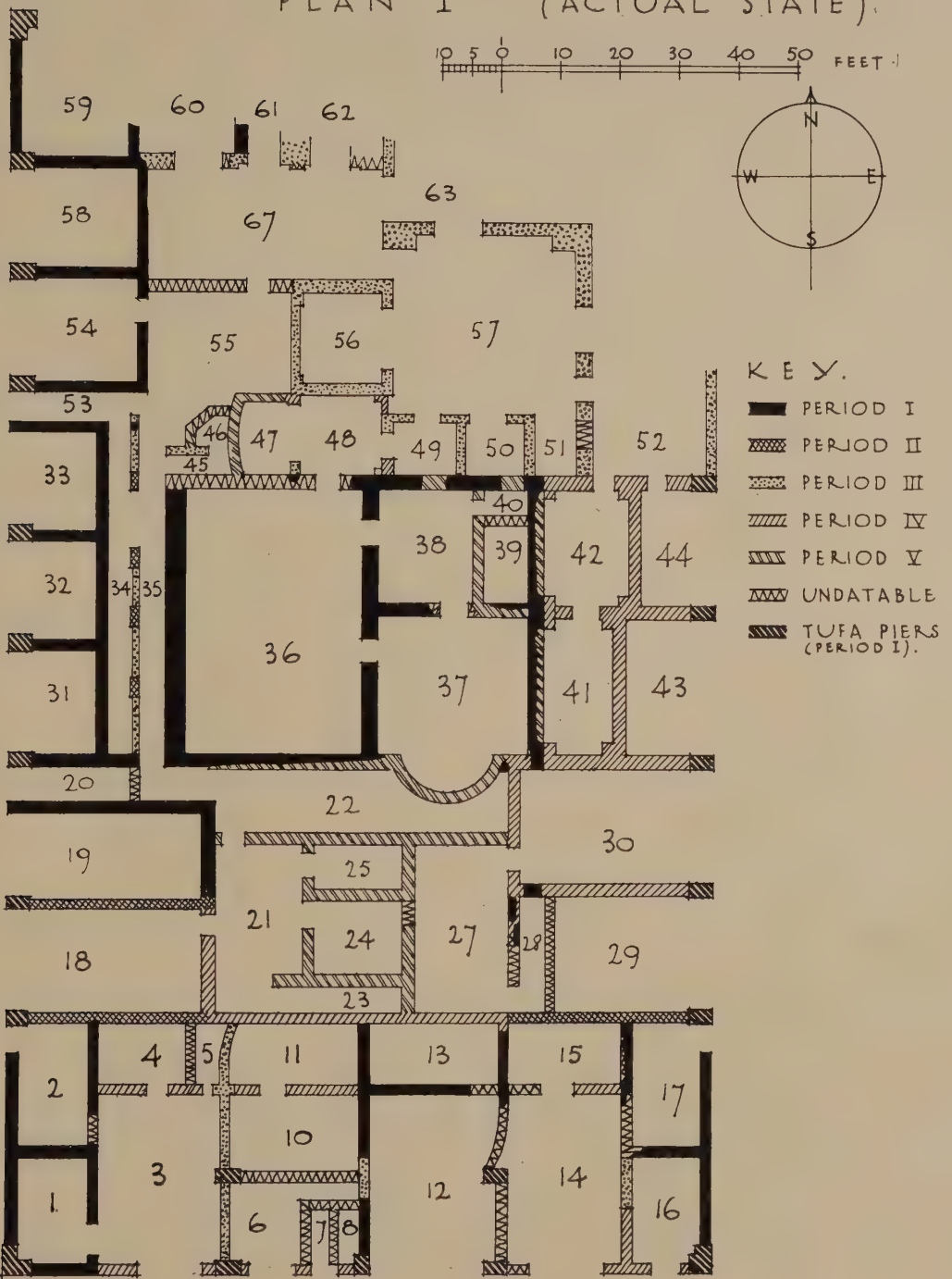
plan may be attempted, except for the north-eastern portion of the building, where, owing to the presence of mosaics of a later period, and of a modern road, it was found impossible to excavate down to the level of the foundations of the earlier walls. This reconstruction is rendered easier by the invariable custom on the part of the builders of quoining with small tufa blocks the ends of the quasi-reticulate walls.[1]

The following are my reasons for certain features shown upon Plan II as probable. (1) Enough of the original plan can be traced to make it almost certain that the rooms of the southern part of the building (*i.e.* those numbered 1 to 17) were planned symmetrically. It is therefore possible to infer the existence of walls N10, W10, and E14 from the presence of walls N12, E12, of which just sufficient remains to enable its existence to be classed as certain, and W3 respectively. (2) When wall E3–E4 was rebuilt in Period III, two small nibs or very short walls, N3E N10W (Plan I) respectively, projecting from E3–E4, were built. Since wall N3 in its present state only dates from Period IV, it seems necessary in order to account for these nibs to postulate an earlier wall, N3, with a door, balancing the wall and door N10. (3) From N3 N14 may be inferred. (4) The piers of large tufa blocks seem elsewhere always to mark the ends of walls running at right angles to the streets; hence walls S19, S18 and S29 have been marked as probable. It is to be noted that the fact that walls E4 and E18 and walls W15 and W29 respectively are not in line is a clear indication that room 18 was divided from rooms 2 and 4, and room 29 from rooms 15 and 17 respectively. (5) In the absence of any surviving remains the plan of the eastern side of the building must remain to a certain extent a matter for conjecture. The tufa blocks, however, which remain, may well, here as elsewhere, mark the ends of walls dividing room from room. (6) Passage 64 is suggested by the fact that an eastern exit from the *cortile* would be highly convenient; but its existence is by no means certain. (7) Nor is the existence of passage 65 to be regarded as certain, though one or two points suggest it. The quasi-reticulate of wall N29 remains at the point where W30 (which, had there been no passage 65, would presumably have been in line with W65) would have met wall N29, and there is no sign of bonding. The style of the mosaic, too, of room 51 (Plan III) suggests that it was intended to cover the floor of a passage which was later blocked, rather than the floor of a tiny room.[2] There is no sign of wall N37 having continued further to the east, though in the present state of the excavations it is impossible to say definitely that it did not do so; nor is the face of wall E37 visible to a sufficient depth, owing to the later raising of the floor level and to the plaster on its lower part, to enable it to be said that there was no door through which a passage might have led directly into the central block. If passage 65 existed at all, then wall E51 was probably built (during Period III) in continuation of E65. (8) There are no traces of any buildings earlier than Period V in the *cortile*, 22, and a *cortile* would undoubtedly be necessary for the purpose of lighting the ground floor of the central block. The position of its southern wall is reasonably certain, for the fact that the piers S18W and S29E are equidistant from S1W and S16E respectively, whereas none of the other piers on the eastern and western sides, except N20W and N64E, balance, suggests that a wall connected them.

[1] For about two to three feet the ends of a wall are invariably quoined with small tufa blocks. Thus in reconstructing it may be regarded as certain that any wall in which there is no sign of quoining continued originally at least from two to three feet further than at present.

[2] The design consists of broad lateral black and white stripes, which would be more suitable for a passage than for a small room which was almost square.

PLAN I (ACTUAL STATE).



In any case it is impossible for the southern wall of the *cortile* to have been any further to the south of its position as shown on Plan II, in view of the existence of wall E11, whilst if it lay further to the north, rooms 11 and 13 must have been of an extremely awkward shape. (9) If rooms 35 and 66 were originally divided, a wall somewhere near the position marked for N35 is indicated; a wall from north to south parallel to W35 is impossible unless it were of wood, for whilst T-joints were not always bonded together, L-joints always were, and traces would be visible at the corner of S35. (10) Incorporated in a later wall, E34N (Plan III), a little of the quoining of wall S53 remains. The wall cannot, therefore, have continued further to the east beyond the point shown on the plan. (11) The question of the subdivision of rooms 36–39, and of the position of their doors and windows, cannot be decided for lack of evidence, excavation only in places having been carried below the higher (Period III) floor level inside the central block, and a good deal of the inner faces of the walls being still covered with plaster, whilst much of the outer side of the outer walls of this block was refaced at later periods. But wall E38 may be considered probable, though no traces of it exist; the fact that in Period III two separate doors on the higher level were opened up through wall N38–N39 suggests that at that time there were two separate rooms, whilst the dividing wall is not likely to have been built in Period III (a characteristic of which is the strength of the concrete used), since it was rebuilt in Period V. (12) Another *cortile* to the north of the central block would probably be necessary for the purpose of lighting it, but its size must remain uncertain. The existence of wall S60, however, may be inferred from the fact that walls E59 and E58 are not in line, and this may possibly be its northern limit. (13) Sufficient of W60 and E60 remains to enable the original plan of rooms 59 and 60 to be seen.

There were no upper floors anywhere, except to the island-block in the centre. Here at a height of about seven feet above the Sullan street level there appears everywhere, except on the two faces of the extreme north of wall E36, to have been a projection, which at a later period was cut away, the rough concrete being then covered with plaster. However, fragments of the original plaster which remain are sufficient to show that this projection was not the beginning of the spring of a vault, but rather that it was a triangular corbel, intended to support the beams of a wooden floor. It is to be noted that the walls of this centre block, where alone there are indications of the existence of an upper floor, are of greatly increased thickness. The absence of any corbel on the two sides of wall E36, at its northern end, is most easily explained by the supposition that here were two staircases of wood leading to the upper floor.

There is then no evidence that the original building was intended to serve as a granary. The rooms to the south seem entirely unsuited to the normal plan of *horrea*, and it is almost certain that they were cut off from the centre by a long wall. All the rooms facing on to the streets were probably shops, varying in size, the largest having inner rooms of the kind not uncommon in Ostia. Each of the two shops numbered 3 and 14 was in addition connected with two further rooms, one of which in each case has no direct exit to the street at all; in these the goods sold in the shops may have been produced. The increased thickness of the walls of the centre block is, in fact, the only feature of the building in any way suggestive of *horrea*; but, as has been seen, this is easily explained by the fact that here alone had the walls to bear the additional weight of an upper floor. No definite purpose can be assigned to

PLAN II (PERIOD I)

the inner rooms; they may have been used as business premises; from their plan it seems unlikely that they were already used as baths.

Period II.—Subsequent periods can easily be distinguished from Period I, the walls being now faced with brick in place of the previous quasi-reticulate. It is more difficult to distinguish these subsequent periods one from another, but the relation of Period II to Period III is clearly visible at a single point. The wall marked on Plan III as W35 consists of four piers, as shown on Plan III, clearly by their material (see below) dating from Period II, connected by a thin wall, the facing of which is of the type of Period III. The piers are faced on all four sides, whereas the connecting wall has a facing only on the side to the east.

Materials.—Mixed bricks were used in the facing, mainly red, of an average width of about 3·9–4·0 centimetres. The *caementum* consists of tufa, containing a certain amount of the *tesserae* of the Period I quasi-reticulate; a very occasional brick is found in the *caementum*. The bricks in the facing of walls S19, S18, and S29 are badly laid, those in the piers between rooms 34 and 35 better; in the former the width of the joints between courses averages 2·2 to 2·3, in the latter 1·7 centimetres. Walls S18 and S29 contained bond-timbers, resting on bases of travertine, probably for the support of the roof during rebuilding. There are no bonding-courses.

Nature of Alterations.—Three walls are rebuilt, and four piers are added, probably in place of wooden posts, to support the roof. The period is clearly not one of great consequence in the history of the building.

Date.—The nature of the materials used suggests the first half of the first century A.D.[1] It is not possible to be more precise. It is possible that the various repairs of this period were not all contemporaneous, despite the similarity of materials used, etc.

Period III.—The relation of Period III to Period IV is clearly visible in five places. At the western side of wall S11, at the middle of wall W16, and again in the north-eastern corner of room 48, walls of the latter period are built against walls of the former in such a way that the facing of the former leaves no doubt as to which is the earlier. At the junction of N11 and W11 and again at the junction of E51 and S51 there are attempts at false bonding.

Materials.—In the greater number of the walls of this period brownish-red or, very occasionally, yellow roof-tiles of good quality are used, of an average width of about 3·9 centimetres. They are carefully laid, the joints averaging about 1·7 centimetres. The *caementum*, though mainly of tufa, and containing as before a percentage of old material, is of extremely good quality. The mortar is rock-like. Usually, though not invariably, bonding-courses are to be found.

Date.—The *terminus post quem* is reasonably certain. Bonding-courses do not come into use with any frequency before Domitian; nor before that Emperor do buildings seem to have been constructed upon the higher ground level at Ostia.[2]

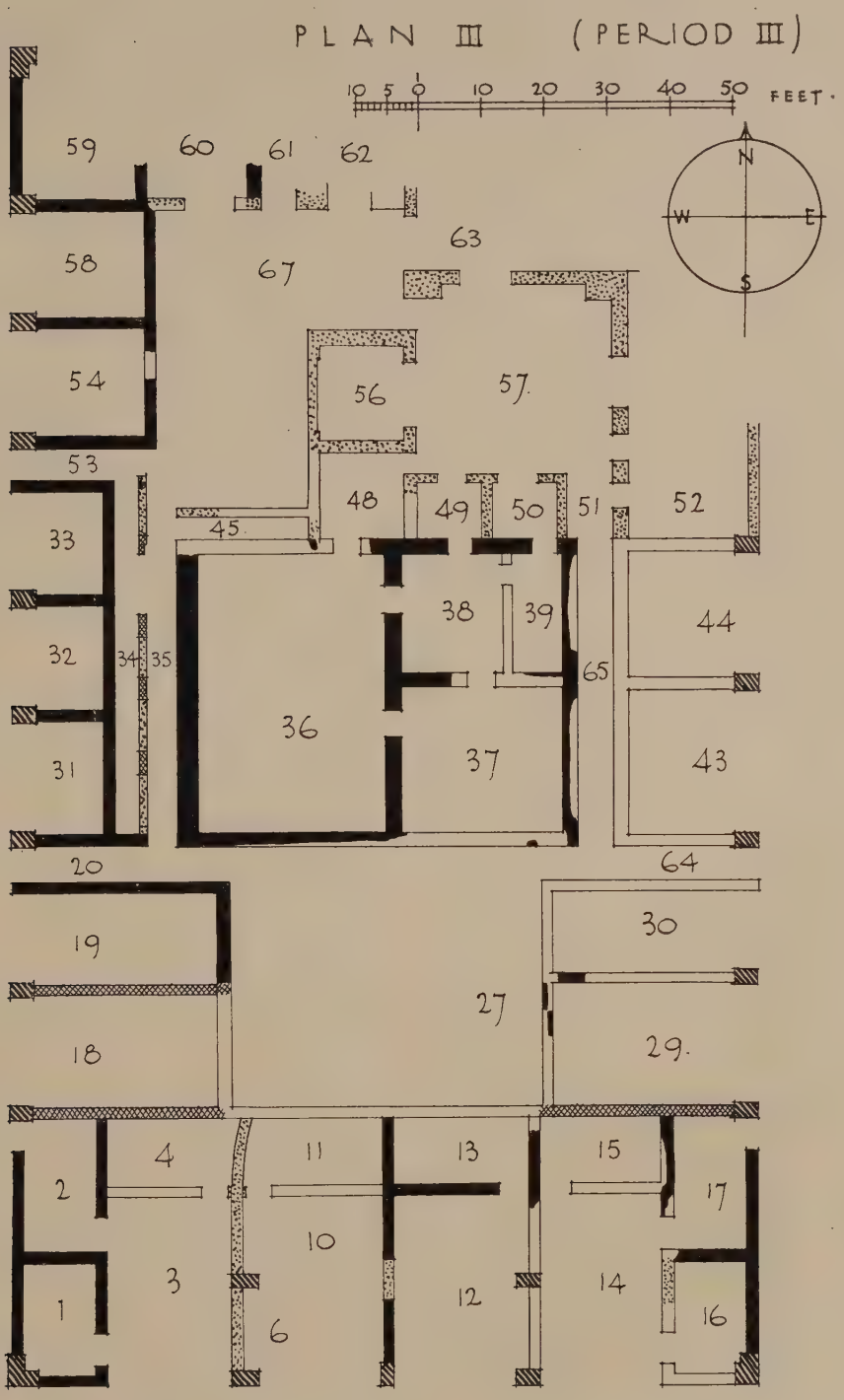
The *terminus ante quem* is not so certain, but by the age of Hadrian the standard thickness of bricks has been considerably reduced.[3] The late first or very early second century A.D. then would seem to be the most probable date for Period III.

Some further walls probably of the same period.—To Period III should probably be assigned certain other walls, N45, E3–E4, W12C and

[1] Cf. E. B. Van Deman in *A.J.A.*, 1916.

[2] This does not apply only to buildings facing a street the level of which was raised. The Domitianic buildings to the south of the Street of the Round Temple are on the higher ground level even though the street was never raised.

[3] Viz. to 3·4–3·6 cms.


PLAN III (PERIOD III)
10 5 0 10 20 30 40 50 FEET
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6

W16N, which are faced with triangular bricks, mainly yellow, again of an average width of 3·9 centimetres. The width of the joints between the courses of these averages about 2·1 to 2·2 centimetres. The *caementum*, again mainly of tufa, is good, though by no means so good as in the type previously described. There are no bonding-courses, but thin streaks of lime penetrate through and along the *caementum* at frequent intervals, evidently representing the amount of *caementum* laid on at a time. The mortar is always extremely dark. The reason for associating these walls with Period III is that triangular bricks of this thickness can hardly be later than the end of the first century A.D.,[1] whilst they differ in texture, etc., from the kind common in Ostia during the middle of that century, and further, as will be seen below, wall N45 can hardly be explained save with reference to other walls which are of Period III.

Nature of Alterations.—The whole of room 57 and the rooms surrounding it were rebuilt, wall N45 was built, the spaces between the piers between rooms 34 and 35 were filled in, and various other walls were repaired or rebuilt. The obvious explanation of these changes is that at this period the central portion of the building was converted into a bathing establishment.

For, in the first place, what was the original purpose of wall N45 if it was not designed to screen the stoke-holes which, at any rate at a later date, it masked? It is only about fifteen inches in thickness, too thin to bear any weight, and at its early period extended further to the east, as can be seen by an examination of wall E45[2] (Plan I).

Secondly, the plan of the new rooms suggests a thermal establishment. What purpose would the great new vaulted hall 57 serve in an establishment of the kind which previously existed here, where for the central rooms a height of seven feet had been sufficient? On the other hand, it would make an excellent *frigidarium*. Similarly, rooms 49 and 50 would seem to have been designed as anterooms, leading to the *tepidaria* 38 and 39, into which two new doors were opened up. If the conversion to baths does not date from this period, then it must be admitted that by curious coincidence no structural alterations were necessary on conversion in the part of the building rebuilt in this period, that rooms suitable for *frigidarium* and anterooms to the *tepidaria* had already been built, and that even the position of the later furnace-holes had already been screened off, all for other and unknown purposes.

In the original central block the conversion to baths involved extensive alterations. The upper storey was removed, the ground level raised, and a hypocaust inserted, heated from stoke-holes on the north, and probably also from others on the south and east, which certainly existed later, and which are probably original.

Period IV.—The relation of Period IV to Period V is visible in four places, at the junction of wall S23–S27 and wall W27, at the junction of N27 and W30, at the eastern corner of N47, and also along wall W42–W41; here walls and piers of Period IV were placed against the quasi-reticulate of Period I, with no attempt at bonding, so that the original facing can still be seen behind them; but in Period V all the then visible facing of Period I was removed, and replaced with one of brick. It is unfortunate that the point where Period IV must have met Period V in wall S37 is not clearly visible in the present state of the excavations.

Materials.—There is no reason to regard all

[1] Triangular bricks are rare after Domitian; and those which are found bear little resemblance to the earlier type.

[2] When N45 was shortened, the point where that wall met E45 had, of course, to be refaced.

the walls classed as Period IV as contemporaneous; they have been so classed because they are all demonstrably later than Period III and earlier than Period V, whilst there is no evidence to enable us to determine their relation to each other. Four distinct types of facing may be distinguished. (*a*) The facing of the walls to the south is not at first sight greatly different from that typical of the Hadrianic and early Antonine period and found in such buildings as the Baths on the Decumanus. There is, however, the difference that these walls contain a varying proportion of thin bricks, which measure in width from 2·2 to 3·0 centimetres; the proportion of these varies in the different walls; in S16E it is as high as 1 : 4. In view of this varying proportion of thin bricks it would obviously be unsafe to use the average width of the bricks, or even of the horizontal joints, which tends to vary in inverse proportion to the thickness of the bricks, as a criterion of any kind. The *caementum* is of tufa and of broken bricks, and the mortar is of good quality. It is noticeable that the thresholds of this period consist of pieces of older ones re-used, and are extremely carelessly laid. (*b*) The walls to the east are faced with an unmistakable orange-coloured broken *bipedalis*, varying in width from about 2·8 to 3·2 centimetres, which has weathered extremely badly. Joints average about 1·9 centimetres, and are well-pointed, but become thicker where thinner bricks are used. The *caementum* is of tufa, but of quite good quality, and bonding-courses are invariable. (*c*) Walls W21, S23–27, N10 and N14E are faced with a dark red broken *bipedalis* of excellent quality, well fired, always about 2·9 centimetres in width. The *caementum*, of tufa, is rock-like, and the joints, which are always well pointed, are of about 1·7 centimetres in width. Bonding-courses are invariable. (*d*) In the north-east, north-west and south-east corners of room 48 yet another type of facing occurs, only a very small amount of which, however, is visible owing to the walls still being largely covered with plaster. But the bricks seem thicker than those previously described, and there is no doubt that they are carefully laid.

Nature of Alterations.—The purpose of the changes described as (*a*) was merely to reduce the size of the shop-fronts and to alter the position of the doors leading into the rooms behind the shops. Those described as (*b*) were the result of the addition of an upper floor, reached by stairs in room 44, to the eastern part of the building. In Period (*c*) earlier quasi-reticulate walls were rebuilt. And changes (*d*) were the result of the closing of the door leading from room 57 to room 48 and of the addition of a new room to the west of 48, the plan of which cannot, however, be determined with accuracy, since its walls were largely pulled down in Period V for the purpose of building an additional apse.

Date.—As already seen, there is no reason to regard the four subdivisions of Period IV as contemporaneous. The bricks of (*b*) and (*c*) and a proportion of those of (*a*) are of the thin variety characteristic of the period of Commodus and of the early Severan Emperors.[1] Type (*b*) indeed is to be seen in the facing of the Commodan period of the Baths of the Decumanus, and in that of the Antonine period of the Atrium Vestae in Rome.[2]

Period V.—This period sees the last of the important changes to this much-altered building. It was the discovery of the decorations of this period which led the excavators to

[1] During this period the average thickness of the bricks was 3·2 centimetres or less.

[2] Cf. E. B. Van Deman, *The Atrium Vestae*. But these bricks are only found in some of the less important walls of the Atrium Vestae during this period.

assign the conversion to baths to the late third century. But there is clearly no need to date the conversion to baths from the decorations which adorned them at the very latest period of their existence.

Materials.—The facing is of mixed bricks, broken roof-tiles, broken *bipedales* and triangular bricks all being used together; their thickness naturally varies considerably, but would average about 3·2 to 3·3 centimetres. The joints are surprisingly uniform in thickness, averaging about 1·9 centimetres. The *caementum* is of tufa, and the mortar rather friable. Since the majority of the bricks are obviously old ones re-used, it is not surprising that they tend to be rather short, many being only 11, and few exceeding 17 centimetres in length. Bonding-courses are usual.

Nature of Alterations.—Apses were added to rooms 37 and 47. Walls N22, W42 were refaced. The doors from rooms 49 and 50 into 38 and 39 were closed, rooms 50 and 58 being converted into cold baths. New furnaces and boilers were installed in the *cortile*, which was divided up to form rooms 21–27. And lastly, the baths as a whole were redecorated, since, as has been said, the remains of the decorations found upon excavation were considered to date from the late third century.

Date.—The character of the facing of the walls, which is not unlike that of the Aurelianic wall of Rome, suggests the second half of the third century A.D. as the most probable date for this period.

Minor Alterations.—A few walls, mostly of minor importance, have not yet been discussed. Of these the following are the most important. (1) At an indeterminable date wall N55 was built, dividing the *cortile* to the north into two halves. The wall is of good quality reticulate, but the tufa used is Grotta Oscura, a most unusual stone for use in reticulate.[1] (2) At some period later than Period III but earlier than Period V wall N36 was refaced on both sides. The reason for this is not difficult to see; the heat of the furnaces, which were made to pass through this wall, would quickly injure the old quasi-reticulate facing. The other walls through which furnaces passed, N22 and W41–42, were refaced in Period V. (3) At some time later than Period V part of wall N45 was cut away, and a new wall N46 built; a small new furnace-room took the place of a stoking-passage. (4) At some time later than Period IV, and possibly during Period V, wall W29 was built, and a door was opened up leading from the west into the new room thus formed, which would no doubt be used as a store-room by the stokers. (5) Some time later than Period III, and probably very late indeed, a wall S10 was built, leaving no entrance of any kind into the two rooms 10 and 11; at the same time two new rooms 7 and 8 were built, facing the street on the south, and of very small size indeed. (6) At an unknown period passage 20, leading from the west into the southern *cortile*, was closed. (7) The date of wall E4 is uncertain. (8) Certain walls such as E12, E14N and N14W, shown on Plan I, are undatable, but probably late, the first being built to take the place of a wall reasons for the existence of which have already been given, the second and third being walls of Periods I and IV respectively, refaced at some later date.

Summary.—The building then commenced as a block of shops surrounding some kind of business premises. The central part was converted into baths in the late first or very early second century A.D. Other alterations fol-

[1] The only other example of its use that I know is in the Forum of Augustus. But here, of course, the wall cannot be earlier than Period III.

lowed, showing that the shops to the east and west remained in use at least until the age of the Severan Emperors. The baths and the shops to the south, as might be expected from their position, remained in use until a very much later period, though whether the shops were maintained in repair whilst continuing in use is another question; the walling off of rooms 10 and 11 might be taken to suggest that when part of a shop fell into ruin, it was simply walled off, whilst that part which could still be used continued to be used.[1]

[1] Cf. the fate of the bakery under Gallienus. When this building collapsed after fire, no attempt was made to remove the debris from the street.